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## READINGS IN ECONOMICS FOR CHINA

SELECTED MATERIALS WITH EXPLANATORY  
INTRODUCTIONS

BY

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## PREFACE

This book has grown out of the work of the classroom and it is intended for the classroom. It does, however, deal with subjects in which the public has a lively interest, and it is hoped that it may be of service to general readers both Chinese and foreign. Information about economic conditions in China is furnished and, in addition, an attempt has been made to provide material that will make possible constant comparison of the East with the West and of one Eastern country with another. It is this material for comparison that is one of the chief reasons for hoping that a book by a Westerner will be really useful and will be favorably received in the educational institutions of China.

It is frequently said that China is a republic in name only. This statement is true enough as far as it goes, but it has been made so frequently that the repetition of it is likely to obscure the fact, no less important, that the Chinese people have put behind them the autocratic political methods and organization of the past. China cannot, in all probability, go back to autocratic political methods: she must go forward to something. Even if the Chinese people could go back to autocratic government it would help them only temporarily, if it helped them at all. Autocracy is deceptive for it gives the people a false sense of security. There seems to be no way in which the people of any country can put off indefinitely the task of finding for themselves the political organization that will enable them to live at peace.

Since there is a close connection between political and economic organization, of which the government railways in China are an example, the things that have been said in the preceding paragraph about political organization have a direct application to a part of the general field of economics. But there is more to be said than this. The economic organization of China has been in part dominated by the autocratic political organization of the past, but for the greater part it has been and still is dominated by tradition and custom. Tradition may be as tyrannical a master in the economic field as is a royal autocrat in the political field. In China to-day custom and tradition are being questioned. They are being subjected to examination and criticism. Here also it may be said that the Chinese people cannot go back to the methods of the past. They must go forward to something. Here also it may be said that there seems to be no way by which the people of any country can put off indefinitely the task of finding for themselves the economic and social organization that will enable them to attain prosperity and to advance in civilization and culture.

This attempt must be made by intelligent search, by patient examination, by testing and weighing. There must be the spirit that is willing to try new ways and to turn the light of useful criticism upon the old. It is this criticism of custom and tradition, this building up of a new economic organization in China, that gives to economic study in this country to-day its absorbing interest and its great usefulness.

The foreigner who may be tempted to read this book, will find in it a selection of readings that will

enable him to understand something of the economic life of China. He must remember that the book was not compiled to explain China to the Westerner and he must judge the book accordingly.

The thanks of the editor are here offered to those who have been of assistance to him. He has been helped by the hundreds of students who have studied with him, by many who are giving instruction in economics in various parts of China, and by friends who have taken an interest in the work. Special thanks are due to the authors and publishers who have in all cases gladly given their consent to the use of extracts from published writings.

It is probably unnecessary to add that the opinions of the various authors are not necessarily the opinions of the editor. In some chapters the purpose in making selections has been to present conflicting opinions in order to arouse thought and discussion. The editor is responsible for the introductions to the several chapters and for the few readings for which no source is given.

To anticipate criticism it may be said that no attempt has been made to unify the romanization of Chinese in the book. The romanization of each writer has been accepted without question.

C. F. R.

*St. John's University,  
Shanghai, April, 1922.*



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# CHAPTER I

## THE NATURE AND SUBJECT MATTER OF ECONOMICS

### INTRODUCTION

The student who is about to enter upon the study of economics does not need a long and complete definition of the science. What he does need is a general indication of the nature of the subject. It has been said that economics tries to give a complete explanation of all business activity. Another writer has told us that economics studies man and his efforts to get a living. Still another has said that economics tries to answer two questions; first, why some countries are richer than others and secondly, why some people in a country are richer and some poorer than others. These statements will serve to indicate to the student the field of study upon which he is entering.

Another way of saying much the same thing is this: economics deals with the prosperity, or material welfare, of families, villages, cities, and states. It must not be supposed from this statement, however, that the purpose of the science of economics is to make countries rich and prosperous. It is true that intelligent and patriotic men desire to increase the prosperity and strength of the countries in which they live. The economist shares such desires with his fellow citizens. What is more, he

believes that a knowledge of the principles and laws of economics is important, if not necessary, in the building up of the prosperity of a country. But, as a scientist, the purpose of the economist is above all to find out general statements about man's economic activities that are true generalizations.

This should be more fully understood by the Chinese student than it is. Economics is not a mere collection of maxims and wise sayings about riches and prosperity. Ancient writers in the West and in the East said many a wise thing about wealth, but the science of economics is comparatively new. It grew up after men recognized that the facts of economic life were worth long and careful study. Such study and the statement of valid conclusions is the first object and purpose of the science.

This desire on the part of the economist to find the truth must be remembered at all times if the student is to understand the subject. We do not expect the astronomer to find in the sky the things that please us but the things that are really there. We do not expect the physician who examines us to modify his statements on account of our prejudices or his own. We ought not to expect the economist to be any less an impartial investigator. It is in this spirit that we ought to approach the subject.

There has been debate among economists as to the nature of the laws with which the science of economics deals. In explaining the mistakes of earlier writers, modern writers upon the subject have sometimes given

students the idea that the principles of the science change from country to country and from decade to decade. While it is true that the laws of economics are not as invariable as the laws of mathematics or astronomy, nevertheless the student must not go to the extreme of supposing that there are different principles of economics for every country and for every period. Men, the world over, eat food that is much the same. They live in houses that are not totally unlike. They suffer from the same or similar diseases. They have the same hopes and fears. What we call human nature is much the same throughout the world, in America or China or Europe or Africa. Such considerations as these ought to make the student pause before adopting the conclusion that what is good for Europe or America is not desirable or workable in China. Let us take a single example. If high wages are, as most writers on economics maintain, a desirable thing for America or for England, the Chinese student ought not to accept without keen examination any statement that high wages are a bad thing for China and that low wages are an advantage to his country.

The first of the readings that follow has been selected to bring out the many problems in the field of the social sciences that need investigation in China. The second reading will, it is hoped, lead to a discussion of the term "Indian economics" as it is used by Professor Kale. The student will be lead to ask whether there is such a branch of the science as "Chinese



economics." If he will attempt to answer this question as he progresses in his study, he will find himself giving close attention to the applicability of the conclusions of Western scientists to Chinese conditions. This is one of the most important things the Chinese student of economics has to do.

### 1. The Chinese Political Science Association \*

*By Paul S. Reinsch*

Dr. Reinsch spoke at the first meeting of the Chinese Social and Political Science Association in Peking on December 5, 1915. He set forth the purposes and functions of the Association and his paper contains his opinion not only of the scope of the political and social sciences, but of the particular fields that need to be studied in China. A part of his address follows:

Looking at the materials at hand for the work of this Association, the prospect is indeed highly inviting and encouraging; both in the treasures of historical, philosophical and literary accounts, covering a period of over three thousand years, and in the living institutions and actual practices which exist in the various parts and provinces of China in great variety illustrating all phases of human life and action, the scientific inquirer will find a world of materials to serve as a basis for a deeper insight and a wider general prospect.

In the field of political theory the great minds of China from generation to generation have dealt with the various forms of human association and authority in a

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\*From an article with this title to be found in *The Chinese Social and Political Science Review*, Vol. 1, No. 1. Reprinted by permission.

manner which will not only explain the Chinese motives of action but will also further illuminate the deep problems which in the West have been dealt with by thinkers from Plato down to John Stuart Mill and Bergson. A clear understanding of how the problems of authority, of popular consent, of legal obligation, and of the nature of political society have been dealt with in China will form a necessary complement to the political reasoning of Western countries.

In the field of law the scientific study of Chinese legal customs and practices, treated in comparison with the Roman and English law, is of world-wide interest. It will also offer a sound basis for reasoning on the applicability of Western principles of jurisprudence to Chinese legal and ethical thought and practice. A scientific study of the old Chinese law in all its branches and manifestations is called for unless China is to drift into a dangerous confusion of half-forgotten principles of old, and half-understood principles of new law.

In constitutional law, the organic arrangements of government in former ages, both as regards the central, provincial and local authorities, will form a sound substratum for efforts to bring constitutional forms into accord with the demands of modern administrative efficiency and of the organized participation of the people at large in the expression of public policies.

The field of international law is particularly attractive and I understand that it is, therefore, to be made one of the particular interests represented by this

society. The special situation of China, under the arrangement of extraterritoriality, has given rise to many problems the discussion of which, from the legal and scientific points of view, is most fruitful. But also in those branches of the law which are common to all nations, Chinese experience has made valuable contributions. In the settlement of international claims, new situations and precedents have often arisen. The negotiation and adjustment of the claims of 1913 may be cited as an example of efficient, prompt and thoroughly scientific work in the application of international law principles. Thus, in every field of this subject—relating, for instance, to citizenship, naturalization, treaties, interpretation, the diplomatic service, extradition, etc.—the experience of China since her entry on general international relations will amply repay detailed scientific research.

The organization and methods of the public administration afford another important field of study. I need only call attention to the manifold duties of the district magistrates and the functions of village government, up through the work of the taoyin and the governors to the organization of the ministries and the general administration of revenues, police, the army, the civil service, the dependencies, banking and currency, and the law courts, to indicate the scope of this field. More particularly, investigations into the methods of audit and accounting, and of official supervision are of immediate practical importance.

The study of the economic life of China, both in its traditional organization under the old system and as affected by the transition to new forms and methods, is of extreme interest. In the old organization, the personal element predominated and action was based upon the relationship of individuals in associations like the guilds or in particular contractual undertakings. The standing and the credit of the individual, his faith and honesty, were the foundation stone of this system. The guilds held their members to strict methods by maintaining definite standards of production and criteria of justice in making and executing contracts for labor or for goods. Banking was based entirely on the personal credit of individual merchants: their property was not dissociated from their personality and made a separate element in granting credit. There were no corporations, but only partnerships in which each individual felt a specific obligation towards every other member of the particular firm. Joint undertakings always took this form; they might either involve only the carrying out of one transaction with which several persons had associated themselves, or they might be a more permanent relationship of business co-operation.

The entry of the corporate form and method of economic organization has brought with it an impersonal element to which Chinese economic life is only just beginning to adjust itself. The impersonal entity of the corporation endowed, after all, with personal rights and obligations relating to property, and the impersonal

form of credit based not so much on the estimate of character of the man but on the collateral which he is able to offer, composed of tangible objects of value: these elements are new in Chinese economic life. The transition from the old to the new in this case is one of the most absorbingly interesting developments which economic history has ever seen. It also involves deep moral problems. If the capital of unquestioned honesty and faith which dwelt in the old system of personal relations can be transferred to the new corporate and impersonal method of organization, China will be strong indeed. At first the corporation does not seem to have been looked upon as an entity to which is due the same honesty of treatment which must be given to an individual; and as a matter of fact men who had never dreamed of relaxing from the greatest strictness in fulfilling their obligations to other men, were often inclined to view corporate property and corporate rights as if they belonged to no one in particular and could be with impunity and without moral guilt abstracted through more or less devious methods. The transformation which is going on in economic life therefore not only involves the substitution of new methods for old on a vast scale, but it also requires a readjustment of moral values and the transfer of the moral soundness, for which Chinese business is justly famous, to the new methods in form and action.

Other fascinating subjects in the field of economics are the matter of agricultural production, supply and

distribution, including the question of the policy of export of food grains; the means of communication from the roads and canals of the older empires to the railways of to-day; the organization of private and public credit; the forms of accumulation of capital and the relation between capital and labor; and the question of government assistance to and interference with economic activities.

Of underlying importance is the scientific study of Chinese social institutions. Family custom, law, and organization, modified according to different periods and geographical locations, is really the fundamental subject of all Chinese social studies. But also the other forms and manifestations of social life richly deserve far more intensive scientific research than has thus far been brought to bear: the relation of literature to life, the importance of the theater and other forms of art, secret societies and associations for special purposes, the development of the newspaper press; in general, the capacity of the Chinese people for association—are some of the subjects which occur at random. But all the deeper problems of sociology involving a more complete knowledge of the principles of human association, the life and death of human groups, are here represented with a material unequalled for richness and interest, both in the records of the historic past and in the processes of social life which may be observed to-day.

## 2. National Economics\*

*By V. G. Kale*

1. *Economics in India*:—It is hardly possible to over-estimate the value of a close and careful study of “Indian economics,” and the importance of the investigation of economic conditions and of the application of remedies suggested by it for the promotion of the well-being of the mass of the Indian people, has been widely acknowledged. The expression “Indian economics” has, however, been often misunderstood, and the idea of its constituting a special branch of study has been even ridiculed. Though a few well-known Indians have zealously devoted themselves to a study of Indian economic problems and have evolved a certain distinctive line of thought as well as substantial and definite results from their investigations, it can hardly be said that a “school” of economic thought, as such, has been yet established in this country.

It is true that a set of earnest students look at the more prominent questions relating to the economic conditions in India from a particular point of view which does not accord with the angle of vision of the authorities in this country and in England. Nor does that viewpoint commend itself to an influential section of publicists and thinkers whose diagnosis of and remedies for the economic ills of India are entirely

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\*From the author's *Introduction to the Study of Indian Economics*: Poona: Aryabhushan Press: 1918. Reprinted by permission.

different. The problems of trade, land revenue, currency, fiscal policy, caste, and the attitude of the State towards industrial enterprise, are thus subjects on which opinion is sharply divided, and if a generalization may be allowed on such a subject, it may be observed that the trend of economic thought in India is slowly hardening into an Indian "school."

"Indian economics" does not constitute a separate science or a branch of the science of economics. But Indian economics may well lay claim to respectful consideration like English political economy, for instance, as it deals with peculiar political, social, intellectual and economic conditions which constitute an important subject of research and study. At any rate, there is a general agreement that the progress of the country and the promotion of the welfare of its people, demand a scientific investigation at the hands of those who devote themselves to an inquiry into the material condition of the various classes of the community in India with a view to finding out remedies for its amelioration. This then ought to be the sense of the term "Indian economics," and it should not be understood, as it sometimes is, to signify any fresh contribution to economic science or the formulation of new economic theories.

2. *Peculiar Conditions*:—The social, political and industrial organization in India has its special features which require careful study and which cannot be made easily to fit in with economic ideas and doctrines which



prevail at the moment in Western countries. These countries themselves have passed through a variety of economic phases and experiences, and India presents economic and social phenomena which have appeared at different stages in the development of Western nations. The present industrial organization of Europe and America cannot be said to be the final phase of their evolution, which has been brought about by different geographic, climatic, religious and political influences. It is neither final nor, by any means, perfect.

On what lines India should or will advance cannot be definitely stated. But the unifying effect of British rule in this country, the peace and orderly government which prevail within its borders, the Western education which its people are receiving, the close contact into which this ancient land has been brought with other countries of the most distant parts of the world, and the hopes and aspirations which have been roused in the public mind about their national destiny by happenings outside and within its borders, all these are factors whose influence on the development of India has been profound. The social institutions, the religious beliefs and the centuries-old traditions of the Indian people, have been and are being deeply affected by these influences, the result of which is a curious mixture of old and new, Eastern and Western. Consequently Indian economic phenomena have become most complex, though highly interesting, and it is difficult to say whither things are moving. It is the work of the

economist to disentangle this mass of confused facts and tendencies and to apply to them the laws of his science in such a way as to suggest the lines along which progress should beneficially be directed.

The vastness of the Indian continent, the diversity of physical and climatic conditions which prevail in its different parts, the variety of planes of intellectual and social progress on which the several Indian peoples stand and the heterogeneity of ideas, usages and institutions which distinguish its numerous communities, constitute the immensely confused though attractive material on which the student has to work, and sweeping generalizations and theories about India as a whole are absolutely out of the question. At the back of this diversity and overshadowing it, there has always reposed a unity, however, which has not escaped the attention of the stranger. And the influences which British rule has set at work are shaping the economic as well as the political destiny of the land in a manner the tendencies and results of which are discernible to the careful inquirer. In this twentieth century no country in the world can remain in isolation and can help being plunged into the vortex of modern material civilization, and Asiatic nations will no longer be what they were in the last century. Outside observers who do not know the Indian people intimately, therefore, feel that

“there is an urgent need that some one or some group of men should set about trying to create a distinctly Indian political economy. The difference between the problems of England and those of this land must show you that there can be no greater

danger than that of blindly following the writings of English economists. They are writing for a country in which conditions are entirely different to those which obtain here and they have at the back of their minds problems which are everything to them but which are little or nothing to you.”\*

3. *Economic Policy*:—Since the rise of the historical school of political economy, economic laws have lost their old dogmatic character, and it is now usual with economists, in dealing with the problems that come within their purview, to make allowances for different circumstances which affect the operation of the laws of their science. The axiomatic assumptions of the older economists are no longer accepted as the starting points of discussion, but the development of every economic phenomenon and institution is carefully traced and the bearing upon it of political, social and intellectual environment is properly taken into account. The inductive method of inquiry, used in conjunction with the deductive, has strengthened the position of the economic science and has rendered the role of the economist more practical and valuable.

In economics, as in political affairs, two different and conflicting veins of thought are seen running along the development of the policy of the State in this country. Imbued with ideas and theories imbibed in England, the Indian rulers have sometimes attempted to foist upon an alien civilization the systems accepted as correct and beneficial in their own country, and it is

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\*Prof. Lees Smith: “Studies in Indian Economics.”

no wonder if the doctrines of the orthodox economists should have been applied wholesale to the conditions in India. On the other hand, the peculiar features of the political and social organization in this country have been made the ground of a refusal to adopt in India measures which experience has proved beneficial in England and particularly on the continent and in America. If *laissez faire* has thus been the keynote of the policy of government in certain matters, in others it has gone to the other extreme, and some of its measures are national and socialistic to a degree.\*

We have noticed this fact not to emphasize the inconsistency lurking in the policy of the State in India but rather to show that the lessons of the recent development of economic thought have not yet been adequately taken to heart by government. Students of Indian economics feel that the experience gained by nations similarly circumstanced as India, is very valuable and that the measures taken by their governments to promote the national prosperity of their people should be adopted in this country though they may militate against vested interests and against pre-conceived notions as to correct economic doctrines which, after all, have relative applicability. Writers of the historical or national school of economics, therefore, insist that

"Science must not deny the nature of special national circumstances, nor ignore and misrepresent it, in order to promote cosmopolitan objects. These objects can only be obtained by paying regard

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\*See Ranade's Essay on "Indian Political Economy."

to nature, and by trying to lead the separate nations in accordance with it to a higher aim.”\*

Apart from the peculiar geographical, climatic, religious and social factors which peculiarly affect the economic conditions of a country, there are other currents and cross-currents such as the consciousness of a growing communal and national unity, the struggle for self-preservation, the tendency to imitate and assimilate foreign institutions and ideas and the desire to attain a higher standard of material prosperity, which play an important part in determining the actions of peoples and states. In the construction of “an independent body of economic doctrines which could be logically deduced from the observed facts of Indian society,”† special national considerations will have their own share. Indian economics will, in this sense, be as List says, a national political economy as distinguished from the cosmopolitical. Economic doctrines must go through the ordeal of applicability to Indian conditions. Mr. Ranade systematically showed how this was necessary and his lead has been followed by several students who have thought and written on the subject. Sir Theodore Morison is right when he observes that the time has not yet come “when it is possible to attempt a complete statement of the economics of Indian industry,” because “the material at our disposal is at present too scanty;” yet the painstaking and observant

\*Frederic List.

†Theodore Morison.

student knows Indian conditions well enough to discuss and indicate the direction in which things are moving and ought to move.

4. *Importance of Economic Studies*.—That Indian economics deserves careful study, is a truth which happily has now been recognized, as we have stated above, on all hands. In spite of its great value, however, for the promotion of the well-being of the people of the country, the subject has not received the attention it deserves. An eminent Indian economist remarks:—

“Who will deny that for the future well-being of our national prosperity, the study of economics is of priceless value? Is it not our paramount duty to wake up in this respect, if we are to succeed in the keen competitive race now going forward in the world, in arts and industries, manufactures and commerce, in fact, in all matters which contribute to the larger production of wealth? The universal recognition of economic studies in all the civilized countries of the West is, we need not say, the most gratifying feature of our busy age and the most hopeful sign of the better welfare of the human race in the future. We earnestly put it to our countrymen whether they are to stand aside while the human race is progressing?”\*

Earnest men, convinced of the close relation which subsists between a correct knowledge of economic laws and conditions and the progress of society that may be achieved by the practical application of that knowledge, have always deplored in India the general apathy of the educated classes toward economic studies. This indifference may be due to our defective system of education or to the discouraging conditions that surround

\*D. E. Wacha: “Four Papers on Commerce and Statistics.”

the student. Whatever the cause may be, latterly signs of improvement have been visible on all hands. The universities are taking kindly to the subject, for the teaching of which provision is being made, and the need of a study of economic science and of Indian economics, has been emphasized by the work of our Legislative Councils and the economic awakening which seems to have come over the country.

Indian economics, as we have pointed out above, is not a separate science, because it does not seek to discover new laws which were not known to earlier thinkers. We have indeed to observe things as they are, describe the economic activities of the different classes of the population and to study the different economic phenomena like high prices, low wages, expanding trade and increasing rents, and have to point out the relation of cause and effect. But we have also to indicate how improvement may be effected by individual and collective action, and how evils may be prevented and remedied. It thus suggests an application of economic laws to Indian conditions and partakes more of the nature of the art of economics or of a normative science. It is, besides, national in this sense that it deals with the peculiar conditions of India and has in view the special requirements of the material advancement of its people.\*

\*The world war, attributed largely to the ambition of Germany to secure economic no less than political predominance, gave a wonderful stimulus to discussions of economic problems relating to different nations, and a large amount of literature on the subject has been produced during the last four years.

5. *Theory and its Application*.—The comparative poverty and the general backwardness of the large mass of population in this country, are patent to any one who has devoted any thought to the subject. The standard of living, and the earning capacity of the people are extremely low and the scope for improvement is vast. The social structure, the industrial organization and the political status, all require reform, and if a conscious and systematic effort is to be made, it must be based upon accurate knowledge of facts and well-thought-out schemes. What part the State should play in bringing about this consummation, what steps it ought to be expected to take for that purpose, and how the creation of larger quantities of wealth in the country should be facilitated by a change in the attitude of individuals and groups of individuals as well as of the State, are questions the solution of which depends on economic studies, whose results may be relied upon to suggest suitable action.

The growing population of India must be decently housed, fed and clothed and the general level of its living must be raised. The national dividend must increase so that a much larger share of wealth may fall to the lot of each person, enabling him thereby to live a more happy life. The present condition in this respect, is, by common consent, not satisfactory, and the problem can be effectively solved only by a fruitful economic study and an earnest endeavor to apply the remedy suggested by it. The work of the economist is



cut out for him. What is required is enthusiasm and training.

"That spirit of self-sacrifice is wanted amongst increasing numbers in this great Empire; it is wanted particularly in economics and the kindred social sciences, for truly the problems of an economic character awaiting solution are gigantic. There are certain ways, too, in which India may be said to be particularly dependent upon the science and the art of economics for progress in social legislation."\*

"We are all economists now;" and many people believe that they know the nature of social ailments and their specifics.

"It is a popular delusion, that, while economic science itself is a difficult subject, the discussion of practical problems, in which economic forces play an important part, can safely be undertaken without special preparation. There is no warrant for this view. The study of economic theory is, indeed, difficult: but the application of the knowledge, which that study wins, to the guidance of practical affairs, is an even heavier task; for it needs not only a full understanding of the theory, but also the trained judgment that can balance against one another a large number of qualifying considerations."†

Though the task of students of economics is so very difficult and responsible, its practical usefulness cannot be over-rated. Prof. Pigou goes on to observe:—

"The complicated analyses, which they endeavor to carry through, are instruments for the betterment of human life. The misery and squalor that surround us, the injurious luxury of some wealthy families, the terrible uncertainty overshadowing many

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\*Prof. H. Stanley Jevons: "Economics in India"—Inaugural Lecture.

†Prof. Pigou: "Wealth and Welfare."

families of the poor,—these are evils too plain to be ignored. Whether the life of man ends with his physical death, or is destined to pass unscathed through that gateway, the good and the evil that he experiences here are real; and to promote the one and restrain the other is a compelling duty. It is easy, if we will, to make the difficulty of the task an excuse for leaving it unattempted. But difficulties, which deter the weak, are a spur and a stimulus to the strong. To display them, not to conceal them, is the way to win worthy recruits. Neither by the timidity which waits at a distance, nor by the wild rush of undisciplined ardor is the summit of great mountains attained. First we must understand our task and prepare for it; and then, in the glow of sunrise, by united effort we shall at last, perhaps, achieve."

6. *Economic Problems*.:—The task of the economist is much more responsible in India than in other countries. His conclusions will run counter to the accepted policy of the State in certain respects and in others they will come in conflict with the pre-conceived notions of the people. Not only has the Indian economist to disentangle complex facts and correctly to interpret them, pointing his finger to the right path of progress for the State and for the various classes of the community, but he has also to expose himself to the charge of being an impatient idealist, an armchair critic or an unpractical, inexperienced and irreverent, radical reformer. He will have to take into account Indian ideals and ways of thought and action and decide how far they may be beneficially retained or suitably modified. He will also have to say things which will prove unpalatable both to the government and to the people as they refer to the policy and measures of the State and the beliefs and social customs of the different

classes of the population. Neither this difficulty nor the other of analyzing complex problems and suggesting their solutions, ought to deter the economic student from his important though perhaps a thankless task.

Difficult problems confront the student at every turn. For instance:—Do the peculiar religious beliefs and social usages of India preclude the possibility of a speedy progress in economic uplift of the people? Is it possible for India to stick to her own ideals and make other nations accept them? Should Indian industrial development run along Western lines? Can India be a manufacturing country? Is it practicable and desirable to continue the old indigenous industries, and can small industries compete with foreign manufactures working on a large scale? How do social institutions like caste affect the economic progress of the people? What change in the political and social institutions of the country is needed to promote rapid advancement? Is the existing educational system of the country calculated to assist in the improvement? Is the present land revenue system in need of reform? How can more taxes be raised from the people without prejudicially affecting their standard of living and how may they be spent to their undoubted benefit? What should be India's fiscal policy and what should be her relations with the other parts of the British Empire and foreign nations? What should be the currency system of India and how should banking be developed in the country? What is the condition of agricultural and factory labor

and how may it be improved? What should be the relations of national, provincial and local finance? Should the State manage its own railways?

7. *The Role of Economics*.—These and other questions of this character assail the Indian economist and demand a solution at his hands. And well may he be weighed down with a sense of responsibility that rests upon his shoulders. Economic inquiry ought not to be merely an intellectual pastime to him. The influence of economic investigation and of the conclusions to which it may point, must be brought to bear upon the life of the community and the actions of the State. In this lies the peculiar importance of the work of the economist.

“The economic student, if he is worthy of his calling, will proceed without fear or favor; he will be tabooed as a socialist by some, as a minion of capital by others, as a dreamer by more. But if he preserves his clearness of vision, his openness of mind, his devotion to truth, his sanity of judgment, the deference paid to his views which is even now beginning to be apparent, will be more and more pronounced. The influence of economic conditions on economic theory has been, let us hope, abundantly demonstrated; but the reciprocal influence of economic thought on actual conditions is in danger of being overlooked . . . Economics is therefore both the creature and the creator. It is the creature of the past; it is the creator of the future. Correctly conceived, adequately outlined, fearlessly developed, it is the prop of ethical upbuilding, it is the basis of social progress.”\*

It is in this spirit that Indian economics must be conceived and the Indian economist must work. And

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\*Seligman: “Principles of Economics.”

the value of economic studies in India cannot be too much emphasized under the conditions which exist at present in the country.

8. *Summary*.—The so-called natural laws of the classical economists, to whom however belongs the honor of having laid the foundations of a new science, have now been discredited and their touching faith in the efficiency of freedom of competition and in the sufficiency of the spontaneous acts of individuals for the progressive improvement of the human race, has proved to be an illusion. The experience of the world war is not likely to bring the millennium much nearer and there is every probability of nations and groups of nations pursuing a separatist policy and evolving their own economic development irrespectively of, if not at the cost of, the progress of other peoples. This tendency which was steadily growing before the outbreak of the war of Germany, has been strengthened by the struggle, though there are also forces working in the opposite direction which, it is hoped, will exercise a sufficiently strong counteracting influence. Writers used to refer to the economic competition of foreign nations as an "invasion" of markets, and now there is ground to believe, the fixed determination to conserve and to exploit natural resources in the interest of their own peoples, will animate the deliberate policy of government.

The consciousness of a separate national existence and of separate national interests, is deep-rooted among

peoples and there is more conflict than co-operation in the international relations of the world.\* It, therefore, sets limits to the operations of the laws of the orthodox economists and constitutes an important factor in the evolution of national economics. J. T. Peddie observes:—

“The term political economy is an empty phrase; it signifies nothing in modern practice, it has outlived its usefulness unless it be retained for the purpose of defining the science of *laissez faire, laissez passer*, as enunciated by John Stuart Mill and the Cobdenite school. On the other hand, National Economics is a science which constitutes the basis of nationality and is designed to control all the laws and regulations relating to education, chemistry, production, transportation, and banking out of which wealth is created; it seeks to make all dead values remunerative.”†

Each nation is trying to take lessons of the war to heart. English statesmen and publicists did not wait for the termination of the war to ponder over the measures of reform; and problems were discussed, plans laid out and operations commenced while the bitter struggle dragged its weary length. The need of pursuing the same policy is keenly felt in this country and much more keenly than elsewhere because the cry of Indian economics is an old one. A silent social and economic evolution has steadily proceeded in India during the past one hundred years. The railways, the post, the telegraph and the steamer linked India to other countries, and our foreign trade, involving competition with

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\* See Sir Rabindranath Tagore's "Nationalism."

† "A National System of Economics."

western manufactures, has shaken to its foundations the old fabric of our economic organization. The working of these and other influences has necessitated a systematic study of Indian economic conditions and the adoption of measures to prove it.

The poverty of the mass of the population' and the evils which accompany it, constitute the most urgent problem that has got to be faced, and the only way to do it successfully is to make a comprehensive and sustained effort to diagnose the disease and to apply suitable remedies. The goal to be reached is thus the attainment of material prosperity by the Indian nation, and the path to reach it is that of national economics indicated above. The existing methods of the production, circulation and distribution of wealth must be adjusted to the changing conditions and requirements of the people, and the State must play an active part in achieving progress. This requires intelligent and patient investigation and also willing and trained workers.

## CHAPTER II

### THE BACKGROUND OF THE ECONOMIC SYSTEM

#### INTRODUCTION

To be understood, the economic system must be viewed in its relation to the physical or geographical environment and to the social system. It is the purpose of this chapter to direct the attention of the student to these two sorts of environment, since they form what may be called the background of the economic system in any particular country and at any particular period in the history of that country.

The economic system is different in the temperate zone from what it is in the tropics. More than one writer has pointed out that a cool climate makes the development of factories easier. The economic system is different on a highland in the center of a great continental land mass from what it is in a group of islands in the sea. The geographic, physiographic and climatic factors, such as are included in the term, the physical environment, are of fundamental importance in making economic conditions what they are. Professor Huntington, from whose book, "The Pulse of Asia," the first selection in this chapter is taken, is a well-known student of the effect of climate upon culture and



civilization. It is hoped that the student will gain more from the reading of the results of a study of a particular case than from any presentation of general principles. It is recommended that the reading of this selection be followed by an attempt to estimate some of the effects of climate and physiography upon a section of China with which the student is familiar.

We consider next the social institutions that lie behind the economic system. The economist must usually, as Professor Ely says, "leave to the sociologists and other students of society a discussion of such topics as the family, religion, morality, ceremonial institutions, and the nature of government." Professor Ely, however, proceeds at once to the discussion of private enterprise as a characteristic of Western economic life, since private enterprise is of such importance in the West that it must be considered by the economist. It is probably safe to say that in China the family system has the importance that in the West is attributed to individual enterprise. The Chinese student who reads Western writers must have this difference between China and the West continuously in mind. To do this he must be able to take a view of the Chinese family system as if he were outside of it. This is an extremely difficult thing to do, but the reading of the fourth selection may help, since the fourth selection presents a family system which is at once like the Chinese system and unlike it.

The fifth selection carries the discussion of the family system and the fundamental Chinese social institutions a step further. We are now introduced to the study of the differences between China and the West by a Chinese writer. Mr. Lieu's conclusions ought to be subjected to keen critical analysis and this critical analysis will, it is hoped, be made easier by the opposing opinions of Professor Mukerjee which are found in the sixth selection.

Such problems carry us beyond the field of economics, but they bring out the important fact that the economic system is a part of the wider social system and can be understood and criticized only as it is seen in its relation to the social system. This study might be indefinitely extended. The traditions and customs of a people with regard to the inheritance of property, the traditions that make for or against the existence of distinct social and economic classes, and the laws that govern contracts are all of importance to the student of economics. The family system has been selected here as being of such importance as to overshadow the other subjects that might be considered.

The student cannot be told too emphatically that he must never forget that behind and around the economic system, to which special attention will be given throughout the rest of the book, lie the physical, climatic and social conditions that affect all human life upon the planet.

### 3. The Geographic Basis of History\*

*By Ellsworth Huntington*

Professor Huntington traveled through Chinese Turkestan or Sinkiang during the years 1905 and 1906. His book is a record of his travels and of his observations. In the last chapter, which is reproduced here, he sets forth his conclusions and his generalizations. Those who are interested in the geographical and historical problems presented by the study of Central Asia are referred to the book itself and to the "references" which Professor Huntington has placed in the front of it.

In studying the geography of Central Asia, we have come to three main conclusions. In the first place, we have seen that not only the habits, but to a large extent the character, of the people of Central Asia appear to have been moulded by physiographic environment. In the second place, we have concluded that, during historic times, climate, the most important factor in that environment, has been subject to notable changes. And finally, it appears that the changes of climate have caused corresponding changes not only in the distribution of man, but in his occupations, habits, and even character. We must now go a step farther, and must see whither we are lead if we accept without further question the validity of these three conclusions. If they are true, it appears that geography, especially through its influence upon character, is the

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\*From "The Pulse of Asia;" Boston; 1907. Houghton, Mifflin & Co. Reprinted by permission of the authorized publishers.

basis of history in a way that is not generally recognized; and that climatic changes have been one of the greatest factors in determining the course of human progress. This conclusion applies primarily to Central Asia, but there is strong reason to believe that it is equally applicable to western Asia, north Africa, and Europe. Apparently, the same is true of America and of the continents of the southern hemisphere, but it is impossible to consider them here.

The geographic basis of history, as distinguished from the non-physical basis, with which we are not now concerned, consists of what may be called permanent facts, on the one hand, and changeable facts on the other. The permanent facts—which are permanent historically but by no means geologically—are exemplified by the relief of the lands, the distribution of water, and above all, the great difference in temperature between the cold polar regions and the warm torrid zone. The changeable facts include not only accidental occurrences, such as earthquakes, volcanic eruptions, the swing of rivers into new courses, hurricanes, and the like, but also changes of climate of longer or shorter duration, which are vastly more important than the others.

Few people doubt the importance of the permanent facts of geography in determining the course of history; although, as it seems to me, their influence upon human character needs greater emphasis than is usually given to it. The main movements of population have been

east and west in Eurasia because mountains and deserts interpose barriers in the other direction. England's commercial supremacy is due in part to her insular position on the border of the comparatively narrow sea between Europe and America, and in part to the presence of coal and iron in close proximity. \* France and Austria have often battled in the valley of the Po because narrow gaps at either end of the Alps gave both countries ready access; and the outcome of more than one battle has depended on the ability of one of the contestants to entrench his army behind a river flowing southward from the Alps to the Po. Napoleon said that the cold of Russia and the heat of Syria were the most unconquerable enemies that he ever met.

The illustrations just given relate to the physical side of the geographic control of history. A far deeper and more important aspect of the subject is found in the influence which physiographic environment exerts upon human character. We have seen that the plateaus and deserts of Central Asia entail upon the Khirghiz the nomadic life, and this accentuates certain characteristics, such as hardihood, hospitality, laziness, morality, and family affection. The oases of the basin floors, on the other hand, cause the Chantos to practise intensive agriculture; and the sheltered, easy life thus made possible, seems to induce weakness of will, cowardice, immorality, and the weakening of those ties between parents and children which lead to careful training of the growing generation. Doubtless religion and other

causes play an important part, but still there remains much of the character of the Chantos and Khirghiz which owes its origin more or less directly to physical conditions. This is probably true of all races. Not that a single individual's character in a civilized community is directly influenced to so great an extent by the inorganic world around him. He inherits, or receives through the training of others, most of what he is. Nevertheless, inheritance is merely the summation of past training: the training of the average man is strictly in accordance with the social order in which he is born; and the social order owes much of its character to the sea, the plains, the forest, the mountains, or the factory river, by which the occupation of the majority of the people is determined. Those who belong to the so-called upper classes of society are apt to forget that the *average* man is limited by physiographic conditions much more closely than they; and the limitations become closer the farther back we go toward the savage state. When all this is considered, it becomes almost impossible to assign limits to the influence of physical environment upon character.

The philosophical historian recognizes more or less completely that history is the record of human character as expressed in action. A migration is not a mere unrelated event: it is the expression of a spirit of discontent, or of a desire for something unattainable under existing conditions. Probably no leader, however gifted, has ever persuaded a thoroughly contented people

to abandon all that they love and migrate to the unknown. The wars of Rome, her wide conquests, and her laws loom large in history; but after all, they are outward signs. Rome was invincible and her leaders were great in war and peace because her people, her average men, were strong in body, resourceful, brave, temperate. When they became cowardly and self-indulgent, Rome fell. The people of the United States do not speak English to-day solely because England lies on the European border of the Atlantic Ocean. Spain, Portugal, and France also lie in highly favorable positions. At first they dominated America; but there was something in English character, a tenacity of purpose and a degree of energy, which out-stripped all rivals. In these and countless other cases history is fundamentally the expression of human character. In these instances, as in Central Asia, the development of character has probably been deeply influenced by geographic environment. Therefore geography must be reckoned with in attempting to understand not only the outward details of history, but the great events which express the character of races. . . .

Before we can properly estimate the influence of climatic changes upon history, it is necessary to investigate the types of change and the reasons for believing that climate varies over very wide areas and uniformly.

Hitherto scientists have recognized two chief types of climatic change. The first is that of the Glacial Period, during which great fluctuations took place.

simultaneously; as it is believed, over the whole world, or at least throughout the northern hemisphere. The other is not so well known, as it was only discovered about 1890. Brückner, seconded by Clough and others, has shown good reason for believing that once in thirty-six years on an average, the whole world passes through what may be called a climatic cycle. During a cycle there are two extremes, at one of which the climate of the continental regions for a series of years is unusually cool and rainy, with a low barometric pressure and relatively frequent storms; while at the other it is comparatively warm and dry, with high pressure and fewer storms. The changes are most extreme in mid-continental regions, decreasing toward the sea-coast, and actually being reversed in some maritime districts, such as eastern New England. The extremes of low temperature follow, and are apparently due to periods of maximum solar activity, as shown by the number of sun-spots and the rapidity with which they are formed. The times of largest rainfall depend on those of lowest temperature, which they follow at an interval of a few years. The other extreme is characterized by diminished solar activity followed by higher temperature and, a little later, by scarcity of rainfall. The cycles have been traced back by Clough to about 300 A. D., but the only data of any degree of accuracy are those of the last century or more. During that time, the extremes, whether of heat or cold, have not shown any tendency to increase in intensity.



The Brückner cycles, as they are called, appear to differ from those of the Glacial Period in degree and regularity only. The effects upon glaciers, rivers, and lakes are of precisely the same nature; and the distribution of the two appears to be identical so far as the continents are concerned. Both are world-wide phenomena. The changes of climate of which we have found evidence in Central Asia partake of the nature of both the Brückner and the Glacial cycles, and lie between them in intensity. It seems reasonable to suppose that the three types of climatic change are of the same nature, are of the same solar origin, and are of equally wide distribution. Apparently, the climate of the earth is subject to pulsations of very diverse degrees of intensity and of varying length. The Glacial Period as a whole represents the largest type of pulsation; upon it are superposed the great pulsations known as glacial epochs, each with a length measured probably in tens of thousands of years; their steady progress is in turn interrupted by smaller changes of climate, such as those of which we have found evidence during historic times in Central Asia; and finally, the climate of the world pulsates in cycles of thirty-six years,<sup>†</sup> and even these are interrupted by seasonal changes and by storms. A curve representing the climate of the earth during the last million years would be almost infinitely complex, a sinuous line composed of large curves superimposed upon larger, small upon large, and smaller upon small. It is conjectured that

the smaller changes of climate are due to varying amounts of heat and other forms of energy received from the sun. It is probable, though it has not been demonstrated, that the larger are also due to the same cause.

Turning once more to our immediate subject, the changes of climate in Asia during the last two thousand years, we have seen that from analogy with the glacial and Brückner cycles we should expect them to be world-wide. Many facts point to the correctness of this view, though as yet the matter has not been critically studied outside of Asia. To begin where my own observation comes to an end, Syria and northern Arabia, from three to five hundred miles south of Lake Gyoljuk, present phenomena almost identical with those of Central Asia. Mr. F. A. Norris, a member of the Princeton expedition to that region in 1904 and 1905, states that a large number of ruins lie in the desert in locations where to-day there is no adequate water supply, and where it would be impossible to secure sufficient water with the system of irrigation employed when the ruined cities were in their prime. Elsewhere the water which appears formerly to have supported oases is now saline. The ruins date from near the beginning of the Christian era. Not far removed from the Syrian ruins, Palestine is a well-known example of a land, once highly prosperous, which now suffers from aridity. Josephus, A. D. 75, describes Judea and Samaria as "moist enough for agriculture, and very fruitful. They have abundance

of trees, and are full of autumn fruits both wild and cultivated. They are not naturally watered by many rivers, but derive their chief moisture from rain, of which they have no want. By reason of their excellent grass, their cattle yield more milk than do those of other places; and as the greatest sign of excellence and abundance they are very full of people." A single description of this kind cannot be accepted as conclusive, but it is worth quoting because of its agreement with other data in regard to Palestine. One would hardly speak of Judea and Samaria to-day as countries which "have no want" of rain.

Farther to the south, the wandering of the tribes of Israel in large bands through the desert peninsula of Sinai, where small caravans now find but a scanty supply of water, presents the same sort of inconclusive, but not therefore insignificant, evidence of desiccation. As to Egypt, which shares the climatic conditions of Sinai, it has been concluded by Sayce, Unger, and others that the great diminution in the area of cultivation during the past three thousand years, the disappearance of certain plants like the nelumbo,—a kind of lotus, once a principal article of diet among the Egyptians,—and the presence of magnificent ruins in the now uninhabitable desert far west of the Nile, indicate a great change of climate. . . .

Still farther to the west along the Mediterranean coast of Africa and in the Sahara desert, many writers, on grounds that appear to be reasonable, have inferred

that desiccation has taken place during historic times. Their observations, however, have generally, possibly always, lacked the quantitative element which alone can make them conclusive. The ruin which has overtaken northern Africa since the time of Carthage is matter of common knowledge. Apparently, the famous march of the Third Legion far into the deserts of Sahara was rendered possible by more favorable climatic conditions, such as those which enabled Alexander to penetrate the deserts of Central Asia. . . .

Professor Huntington next deals with the climate of Europe and refers to the writings of Caesar and of the historian Gibbon to show that there is good reason for believing that the climate of that part of the world has changed, and that Europe has become warmer. He continues—

The cause assigned by Gibbon for the amelioration of the climate of Europe is the cutting away of the forests and the opening of the land for cultivation. The same process has popularly been supposed to account for the undoubted change which has taken place in Palestine and northern Africa. Meteorologists, however, agree that although forests conserve rain after it has fallen they have no appreciable effect upon its amount. Having examined the meteorological records for various regions where forests have been cut off, or where they have been allowed to renew themselves after having been removed, students find no evidence that the climate has been altered. Moreover, as we have seen in the Lop basin, desiccation has taken place over broad areas where the trees have by no means been cut off,

but, on the contrary, have remained standing, and have died for lack of water. The chief influence of forests appears to be that they keep the soil in a more uniformly damp condition, which prevents floods and makes the rivers and springs of more uniform volume. They also serve as a protection, and keep the air within them from being suddenly heated or cooled, thus preventing rapid changes of temperature. As to the relation of forests to changes of climate, the fact seems to be that in many arid regions forests have been cut off, and have not been able to replace themselves because of increasing desiccation due to other causes. In Europe, the forests have been cleared because the country has now become so warm that agriculture is profitable and a dense population can be supported. The climate of Europe seems to have gone through the same changes as that of Africa and Asia.

Before summing up the results which changes of climate may have had upon the history of the world as a whole, it will be profitable to inquire into the influence of the far milder changes of the Brückner cycles during the nineteenth century. If they prove to have been attended by important results, we can scarcely avoid the conclusion that greater changes must have produced greater results. The world-wide dry periods of the last century may roughly be said to embrace the years 1830-40, 1865-75, and 1887-97. During the first epoch the Lop basin suffered severely from drought. The villages of Dumuka, Ponak, and

others were abandoned for lack of water; and new villages were founded higher up-stream. Distress of the same sort prevailed in other places, and large numbers of people moved to new sites. Some went along the zone of vegetation, and far to the east founded the villages of Niya, Cherchen, and Charklik. The movements of this time are unquestionably due to climate, and it is fair to say that whatever of hardihood and experience, or of trouble and distress, came to the people as the direct result of their migrations, may be set down as the result, single but genuine, of the action of geographic forces in forming character. The next two periods of deficient rainfall are characterized by rebellions among the Dungans and others, and by attempts on their part to occupy better lands. I cannot state positively that prolonged drought was the cause of the rebellions, but it cannot fail to have contributed to the discontent which finally broke out in war.

In Persia, the three periods of deficient rainfall were marked by destructive famines, one of which, in the seventies, has been referred to in the chapter on that country. Farther west in Turkey, it is notable that these periods were times of especial commotion in that always troubled land. Between 1829 and 1833, all the Balkan states were in an uproar, there were rebellious risings in Asiatic Turkey, and war broke out with Egypt and Russia. During the later sixties and in 1874, fresh disturbances of the same sort once more led to war with Russia in 1877. Lastly, the middle of

the nineties was characterized by some of the most atrocious massacres of all times, when Armenians were killed by scores of thousands. It is true that similar famines, insurrections, wars, and massacres have often occurred in the intermediate periods when in most places there was no special scarcity of rain, but they have almost invariably been less severe than those during the dry periods. The synchronism between the *greatest* disasters and the most pronounced lack of rainfall indicates a causal relation between the two, a relation which is unmistakable in the case of famines.

The connection of insurrections, wars, and massacres with deficiency of rain is less direct than that of famines, but no less real. It depends upon the state of irritability which prevails when scanty crops make it hard to sustain life and to pay taxes. Few people in more favored regions realize the distress which may arise from lack of the expected rain in semi-arid lands. Wills has investigated the relation of rainfall to the product of wheat per acre in South Australia. He found that during the best seven years, when the average rainfall during the growing season was 18.5 inches, the average yield of wheat was 12.4 bushels. During the poorest years, when the rainfall averaged 13.5 inches, the yield was only 6.6 bushels. That is, when the amount of rain fell off one third, the wheat harvest fell off one half. During the four good years from 1897 to 1901, I lived in the city of Harput in Armenia on the upper Euphrates. The rainfall averaged

twenty inches. Brückner's figures show that during the drier extremes in his cycle the precipitation of stations well in the interior of the continents is only half as great as during the other extreme. A falling off of one third in the rainfall of a place like Harput would therefore be moderate; but that, according to the Australian rule would mean only half as much wheat as in good years. No one who knows the Turkish tax-collector can doubt the distress and the rancor against the government which this would occasion. I was the guest of a poor Kurd one day near Harput. When my escort, a Turkish soldier and tax-collector, left the room, my host picked up the Turk's whip, and holding it out to me said in Turkish:—

“Do you know what that is for?”

“For his horse,” I answered.

“No,” was the bitter answer. “It is for men, for us Kurds, when we can't pay our taxes.”

He went on to tell me a long story of how the soldiers came every year at harvest time, and when, because the crops were poor, the Kurds could not pay all that was demanded, beat them. In the case of Armenians, I have even known of women being beaten to extort taxes, and of men who were tied out of doors in a bitter winter wind while water was poured over them and they were allowed to freeze, for the same purpose. In such a land it is plain that deficiency of rainfall causes intense distress. One can scarcely blame the suffering peasants for being ready to rob and kill.



their more prosperous neighbors, for plotting against the government, or for hating the foreigners whom they are lead to regard as the cause of their woes. If such results can follow from a short period of decreasing rainfall, what is to be expected from a period during which the decrease continues from generation to generation?

Turning now far away to America, we find that even this favored land has suffered during the same periods and for the same cause as the blighted countries of Asia. During the years when Chinese Turkestan had its migrations and rebellions, Persia its famines, and Turkey its revolts and massacres, the United States had its financial panics. Clayton has pointed out that during the nineteenth century, each of the great financial crises of the country has been associated with deficiency of rainfall. . . . The idea that financial crises and political changes in the United States may be genetically connected with famines and revolts in Asia suggests a hitherto unsuspected unity of history. If the small changes of the Brückner cycle can produce such important results as those described in the preceding pages, it is clear that the far greater changes of which we have found evidence in Central Asia and elsewhere must have exercised a tremendous influence upon history.

In the dry regions of Chinese Turkestan, we have seen the effect of a change of climate from conditions of comparative aridity to great aridity; in Kashmir, we

have seen the opposite effects produced by a change from conditions of extreme coolness and moisture to those of moderate coolness and moisture. The physical change in the two cases was of the same type, from a cooler, moister climate to one that is warmer and drier. The effect on human life, however, was utterly different. In places such as the Chira and Niya regions in Turkestan, the effect of increasing aridity was to drive away the nomads, and to greatly diminish the number of persons supported by agriculture and to reduce them to a somewhat lower stage of civilization. At Enderéh, Yartungaz, Lulan and elsewhere, the result was much more disastrous. Not only did the population decrease enormously, but the few people who remained were compelled to abandon agriculture and to adopt the life of semi-nomadic shepherds or fishermen. All arts decayed, and the people degenerated to a very low stage of civilization. At Turfan, again, the population was permanently much reduced, and at one time, when a comparatively rapid increase of aridity was forcing the Mongols out of the mountains, the wandering nomads raided their neighbors in the villages of the plain so mercilessly as to drive away practically the whole population. Everywhere in arid regions we find evidence that desiccation has caused famines, depopulation, raids, wars, migrations, and the decay of civilization. In the moist region of Kashmir, on the contrary, higher temperatures and diminished snowfall have made for progress. The nomads of ancient times have adopted

the pursuit of agriculture; the number of people whom the region can support has increased manyfold; and all manner of arts and crafts have been encouraged. The civilization of Kashmir is low compared to that of Europe, but it is far in advance of anything to which pastoral nomads attain.

Chinese Turkestan and Kashmir may be taken as typical of the effects of changes of climate upon the arid regions of the world, on the one hand, and upon the moister temperate regions, on the other. If our theories as to changes of climate and as to the influence of physical environment on human habits and character are correct, the history of Turkestan ought to be typical of that of the vast arid and semi-arid regions extending from Morocco on the west to Manchuria on the east; and the history of Kashmir ought to be typical of that of Europe and other cool, temperate regions. A glance at the history of the world as a whole shows that this conclusion accords with the facts. The nations of arid regions were highly civilized and powerful in the past; they have fallen to-day. The nations of cool, moist regions were barbarous and weak in the past, but have risen to power to-day. And those such as Greece and Spain, and perhaps Italy, occupying regions between the two extremes, hold intermediate positions in civilization; they are behind the cool, moist countries of Switzerland, England, and Germany, they are ahead of the arid lands of Persia, Arabia, and Algeria.

It has often been said that civilization has advanced from east to west: it would be truer to say that it has advanced from south to north. In the Old World, the earliest countries to enjoy a high state of development were Egypt and Babylonia, situated about thirty degrees north of the equator. Next Persia rose to prominence, not much farther north, to be sure, but located at a higher elevation, where the climate was cooler. About the same time, Syria, Greece, and Carthage, lying between thirty-five and forty degrees of latitude, became dominant powers. The next step was roughly five degrees farther north, to Rome. After the fall of the Roman Empire, there was for a few centuries no nation worthy to be called a world power. Then, when the Dark Ages passed away, France, Austria, and the other states of southern Germany, all of which lie between forty-five and fifty degrees from the equator, took up the traditions of Rome. Finally, during modern times, the northern nations of England, Prussia, and Russia have risen to places of power. In America, there has been a somewhat similar progress from south to north. First, at the beginning of the Christian era, Yucatan, in latitude twenty, became highly civilized; then in the Middle Ages, Mexico and the Aztecs, five degrees farther north; and to-day the United States and southern Canada, with the center of power between latitudes forty and forty-five.

In explanation of the manifest movement of civilization from south to north, it has been commonly

said that, for some undefined reason, man's relation to climate has changed. As he has become more civilized, he has also become adapted to colder and moister climatic conditions. To put it more fairly, the civilized man of to-day, being supposedly of a more nervous organization than his predecessor of two or three thousand years ago, finds that his impulses toward activity and toward self-control are most perfectly balanced in a moist and cool climate; whereas the pioneers of civilization found the most favorable conditions in a dry, warm climate. According to a further assumption necessitated by this view, man took the first great step toward civilization, that is, adopted the pursuit of agriculture, in arid regions where irrigation was necessary. It was an easy matter, so it is said, to lead a little water to a patch of seeded ground which otherwise would have been unproductive; far easier, indeed, than to clear and cultivate a similar patch which needed no artificial supply of water, but was sure to be full of a great variety of plants not wanted by the sower. To a certain extent these views are perhaps true, but if our theory of changes of climate is valid, they require profound modification.

According to the climatic hypothesis of history, as we may call it, mankind, since first the race gained the rudiments of civilization, has always made the most rapid progress under essentially the same climatic conditions. The conditions apparently are that summers shall have a sufficient degree of warmth and of rainfall

to make agriculture easy and profitable, but not enough to be enervating; that the winters should be cool enough to be bracing, but not deadening; and that the relation of summer and winter shall be such that with forethought every man can support himself and his family in comfort the year round, while without forethought he and his will suffer seriously. Comparatively clear, dry air and high barometric pressure appear to be subsidiary conditions favorable to human progress.

The evidence of climatic changes which we have found in the Old World seems to render it probable that these conditions have prevailed in each of the great countries of history at the time when it has risen to the highest degree of civilization and power. Therefore we may conclude that long-continuing changes of climate have been one of the controlling causes of the rise and fall of the great nations of the world. The Dark Ages, at first sight, do not seem to correspond to this conclusion. Climatic conditions, according to our hypothesis, were much like those of to-day. Accordingly, we should expect to find rapid progress of civilization in northern Europe. The discrepancy is easily explained. At the beginning of the Christian era, the vast plains of Central Asia appear to have supported untold hordes of nomads. When the plains began to grow rapidly drier, the inhabitants must have suffered sorely. According to Hahn, a rainfall of twenty inches a year in New South Wales makes it possible to keep over six hundred sheep on a square mile of land; with a rainfall

of thirteen inches only about a hundred can be kept; and with ten inches only ten sheep. During the short space of a thirty-six year cycle, meteorological records show that the rainfall at certain Siberian stations near the center of Asia may vary in the ratio of 2.3 in the good years to 1 in bad years. Therefore we can scarcely be exaggerating if we assume that during the great and relatively sudden desiccation in the early part of our era, the average rainfall decreased in the ratio of 2 to 1. If it fell from thirteen inches to six or seven, the nomads would have been able to find pasture for only one sheep where formerly they found it for fifteen. If the rainfall fell from twenty inches to ten, the number of sheep would decrease from sixty to one. Manifestly, if such a change took place in the course of a few hundred years, most of the inhabitants would be obliged to migrate. As the nomads pressed outwards from the drier central regions of Asia, we can imagine how they were obliged to fight with the neighboring tribes whom they tried to dispossess. The old inhabitants and the newcomers could not all live together; new migrations would be a necessity; and confusion would spread in every direction. Meanwhile, Europe, after its long period of blighting cold, was becoming warm and habitable, and the migrants pressed into it, horde after horde. No one tribe could stay long in its chosen abiding place, for new bands of restless nomads pressed upon it. Rome fell before the wanderers. Nothing could stay their progress until the turn of the tide.

Perchance, though this is only vague conjecture, King Arthur and his knights bear a hint of what might have occurred all over Central Europe if it had not been for the influx of barbarians. England, in its remote corner of Europe, far from the dry plains of Asia, responded at first to the influence of improved climatic conditions, until it, too, was reached by the migrating horde of invaders. Meanwhile, in the most densely populated part of Arabia, another movement of the nations had begun, presumably due to the distress due to rapid desiccation. The Arab migrants carried with them the fanatical faith of Mohammed, and were by it inspired to remoter conquests. The migrants to Europe found there Christianity, and in time became its greatest exponents.

When the progress of desiccation was stayed in Asia, and the desert lands began to grow slightly more habitable, there was no further impulse impelling migration, and Europe was freed from further invasion. At last, at the beginning of the Middle Ages, she was free to develop in response to the favorable climatic conditions which had come upon her. Christianity and the civilization to which it gives name and form found a fruitful field of development, one which has continued to expand. Mohammedanism, too, was able to make progress for a time during the period of revival accompanying the expansion of the habitable areas of Persia, Syria, and other parts of Central Asia and north Africa. Under the Caliphs, Mohammedan civilization progressed



more rapidly than did that of Christian Europe, but soon the climate ceased to become more favorable, and stagnation ensued, followed by retrogression, when a slight tendency toward desiccation again appeared.

To-day, the strongest nations of the world live where the climatic conditions are most propitious. Japan and north China in Asia; Russia, Austria, Germany, France, and England in Europe; and the United States and Canada in America, all occupy regions where the climate is of the kind which we have defined as most favorable to the progress of mankind. Much as these nations differ in race, in ideals, and in type of civilization, they all agree in possessing a high degree of will-power and energy, and a capacity for making progress and for dominating other races. Throughout the course of history, similar conditions of climate seem to have prevailed wherever a nation has displayed these qualities. With every throb of the climatic pulse which we have felt in Central Asia, the center of civilization has moved this way or that. Each throb has sent pain and decay to the lands whose day was done, life and vigor to those whose day was yet to be.

#### 4. The Family as the Economic Unit in India\*

*By Radhakamal Mukerjee*

The Hindu family, "joint in food, worship and estate," is the economic unit of Hindu society. The

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\*From Radhakamal Mukerjee, "The Foundations of Indian Economics;" London; 1916. Longmans, Green & Co. Reprinted by permission.

family consists of the man and woman, their sons, grandsons, and great grandsons, who live in peace and harmony and share the common chest or purse. Founded on the virtues of affection and self-control, this system tends to develop a spirit of self-sacrifice, and mutual control and dependence, which are quite opposed to the competitive individualistic spirit, the keynote of modern industrialism. Indeed, the sentiment which it fostered and the economic effects it produced have led to certain fundamental differences characteristic of our industrial life clearly distinguishing it from that of Europe and America. Thus, while in the West it is the individual's own scale of wants, his standard of comforts and of activities which regulates the growth of population, in India the family mode of enjoyment or standard of life is the main factor. Marriage in Hindu society is compulsory at a particular age, so the fluctuations in prices of the crops have no such effects as in Europe, on the number of marriages. In Europe the check to the increase of population is competition, the struggle for food and its law, "if a man will not work, neither shall he eat," enforced upon the individual by society. In India the rigor of the law is mitigated in its operation by the family. The family protects the young wife, the helpless orphan or the decrepit grandfather. Thus state aid or old age pensions become unnecessary. The members of the family are assured maintenance not only for themselves but for as many children as they choose to bring into the world from the property

ordained to be the hereditary source of maintenance for all. There are also theoretical restraints on the birth-rate which serve to prevent excess of population. These restraints are not economic but moral and religious and are enforced by the family. Such restraints, however, are not now operating to any great extent. As is the case among the lower grades of society in England, the great bulk of the population of our country has no prudential checks. . . . Indeed, the notion among the Hindus that it is the duty of each and every one of society to bring into the world at least one son, without whom not only he but all his forefathers will be without food and water in the next world, though appropriate to a race in its early stage of evolution, has now become unsuitable under present economic conditions. To the Hindu lawgivers family increase was associated with prosperity, for the Hindus in very early times when the codes were drawn up were surrounded by inimical tribes, most of whom, again, being Dravidians, were matriarchal societies. Thus even now there is the strong prejudice in favor of the birth of sons, which, however, in the face of the present relation of the population to the food supply is accompanied by baleful economic consequences. The population of India has increased threefold in the last century. This rate of increase, though small as compared to countries in Europe and America, is, indeed, high if we consider the agricultural and industrial conditions of our country, so that the only checks which now seem to operate are brought about by

the very fact of over-population, viz., pestilence and famine. The want of staying as well as of resisting power in the physique, which is due to inadequate nourishment or sustenance, consequent on over-population, is responsible to a great extent for the prevalence of malaria, plague, consumption and other diseases which are now fast spreading in the country.

But though the ideal of the joint-stock family has been unable to exercise its moral influence with regard to the population question, its ennobling effects on our socio-economic life, through its conception of the marriage relation, can hardly be overestimated. In India marriage is a sacrament and its supreme object is to perpetuate a family, a patrimony and a faith. The consent of the family is necessary. Individual likes and dislikes are not of much importance; for marriage is not a means of one's individual pleasure or advantage, but the duty of transmitting an unimpaired estate and of maintaining the integrity of a family is the supreme consideration. And the family in maintaining a strong authority in its integrity does not allow economic considerations to stand in the way of a marriage. A man need not be very wealthy before marrying, for the family will support his wife and children, and the girl in the family organization is not left to shift for herself in the matrimonial market. Her father arranges to marriage and she finds assured maintenance provided for her as soon as she leaves her parents for her husband's family; on reaching maturity. . .

Our family organization enjoining the man that marriage is a family duty necessary for the perpetuation of family culture and a bond which is indissoluble in the interests of the children, the protecting of the woman from being dragged into the mire of industrial competition and struggle for living, has contributed in no small degree to a high standard of morality and real contentment of the people.

The unity and stability of our joint-stock family have, however, been threatened by the growth of individualistic tendencies due to the recent changes of economic conditions. According to Professor Nicholson, one of the most characteristic features of "economic progress" has been the disintegration of the family; freedom of the individual has displaced the bonds of blood relationship, at any rate to a considerable extent. New organs for the accumulation of capital have been invented, individual earnings need no longer be invested in family land. The desire for personal liberty has made necessary a change in the idea of the family as the social organ of property.

The author next deals with the history of the patrimony. He takes up the Code of Manu, the effect of the spread of Buddhism and the difficulties under modern legal theory.

It is not, indeed, the High Court decisions, but the economic stress and consequent growth of individualistic spirit in our country that have been slowly sapping the roots of the joint-family organization. A more complex economic life has necessitated a change. It is possible

that the joint-family system may come to an end. But let us not accept the family system of Europe as the ideal. To gratify individual desires, feelings and preferences, the system of the West has sacrificed family patrimony and tradition, and in its passion to develop the personality of the individual has often shown an impatience of the restraints imposed by a genuine consideration of the well-being and interests of the children.

The system of our country, indeed, disciplined the people in a lofty family ideal, but it now tends to lose its efficacy and moral significance. It has engendered an unmistakable affection in the man and woman and habituated them to look upon the marriage based on such affection as sacred and indissoluble. It has helped the maintenance of a respectable and happy home, inculcating a noble ideal of social service, infused strength and vigor into the life of society. Society in India, indeed, draws its very inspiration from the joint-family system, being dominated by the manifold personal ties which bind one to it, viz., the relation of the son to the parents, of the husband to the wife, of the householder to the guest, of the disciple to the *guru*, of the servant to the master. Thus the ideals of Hindu manhood that have been handed down from the remote past through our epics and our *puranas*, our folk-songs and rustic tales, are all drawn from the home and joint-family life. The heroes of the Ramayana and of the Mahabharata typify the supreme examples of filial obedience. . . . As it has been well remarked, "the home in India was

the great sanctuary where sacrifices and martyrdoms were to be undergone for the sake of those sacred ties which bind one to it; and this would, according to the notion of the Hindus, infallibly lead him to a realization of the supreme duty which a man owes to God—culminating in a glorious renunciation of home for the good of the soul and of the world. Indeed, in a place where a joint and undivided family system required a man to live and eat together with all his near kinsmen, it would be impossible to live in harmony without elevating domestic duties into the highest virtues. Hence no other nation has given so high a value to domestic duties, identifying them so closely with spiritual.” But while it develops the gentle qualities by sanctifying domestic duties, our system has, on the other hand, promoted stagnation and idleness, and thus sacrificing economic progress has stood in the way of the development and the perpetuation of that rational personality, which is the supreme end for which the family exists. In the joint family no obligation exists on any one member to stir a finger if one does not feel so disposed, either for his own benefit or for that of the family; if he does so, he gains thereby no advantage; if he does not do so, he incurs no responsibility, nor is any member restricted to the share which he is to enjoy prior to the division. A member of the joint family has only a right to demand that a share of the existing family property should be separated and given to him; and so long as the family union remains unmodified,

the enjoyment of the family property is in the strictest sense common. Though social opinion and domestic influence—the ladies exert it to no small extent—tend to check cases of idleness, these are not by any means rare. When the members of the family lose their sense of responsibility, and sitting idly at home and begetting children, continue to share in the common property, the family gradually becomes impoverished. The home, instead of being the nurse of a lofty idealism, now becomes a source of endless worry and distraction. The bickerings of women and the long-standing enmity of men baffle the energies of the more industrious and intelligent. Landed property, held in co-partnery, cannot be improved because of the quarrels among the members. Litigation becomes rife, and whole families are thus ruined and become extinct. The picture of such a home has been thus given by Mr. N. Ghosh: “The Hindu home is a source of endless distraction and embarrassment. It has crushed many a spark of native fire, buried many a noble project. Poverty is not the worst of its destructive agencies, but the agitation of feeling caused by the living together of a large number of men and women, very few of whom are in sympathy with each other, and almost every one of whom has some grievance against the rest, cannot fail to deaden energies. The quarrels of the women, the deep-seated malice of the men, the ‘mighty contrasts’ which ‘rise from trivial things,’ give no rest to the unfortunate inmate of the Hindu home. The fight rages sometimes



about a point of dignity, sometimes about money, sometimes about questions of authority and obedience. Occasionally, of course, there is intermission of above hostilities; but no more peaceful condition is ordinarily reached than that of armed neutrality." The picture has certainly been overdrawn, but unfortunately there is something in the Hindu home which makes such a drawing possible. These quarrels become more frequent as poverty and the cost of living increase, and as the individualistic West exercises its disintegrating influence on the family till, under the stress and exigencies of modern life, the Hindu comes to disregard his old joint system altogether, refusing to be bound by obligation beyond the circle of his nearest kith and kin.

Thus actuated though it is by a noble idealism, it is being endangered by the stress and the struggle of the civilized life of the present day. Life has now become harder as the standard of living has also become much higher, and individual earnings have now come to be devoted to satisfying individual wants instead of being shared equally among distant family relations.

Neither India nor Europe and America, but something above them will give us the ideal family. The ideal family regards duty as the most sacred thing in the world. It has a high sense of the privilege of transmitting its qualities and its culture to the child. It gives the child right training, disciplines him in the robust virtues of self-control and self-sacrifice. Thus it consciously selects, cultivates and transmits the

fairer fruits of a rational civilization. The child, as the heir of the past and the promise of the future, represents humanity, and the ideal family serves humanity in serving the child. By such social service alone, the healthy development of individual personality in man as well as woman is attained.

The evil effects of our joint-family system have been intensified by our systems of inheritance and succession. In the joint-stock family, while there is no room for bequest, the right of inheritance is fundamental. But our law of succession has a very pernicious influence on our economic life. The land is divided into many small estates. The small landowners have little capital to make permanent improvements on their estates. Usually the security of tenure is less in small than in large estates, and the relations of landlord and tenant are worse. Again, with regard to property other than land, Mr. Dadabhay has remarked that the family capital, as soon as it reaches the point when it can be increased with the greatest advantage, undergoes a process of disintegration, which reduces the participators to actual poverty, or at least throws them back to the original position, when they have to start accumulation anew. This process goes on seesaw fashion, to the detriment of industry. Nothing is more certain in finance than that reduplication and growth of capital progress successfully and quickly after accumulation has reached a decent point. The same might be said of the Mohammedan system of succession. Thus the capital

that can be accumulated is very small, and the village indebtedness is chronic and increasing at an alarming rate. On the other hand, the system of primogeniture in the West is open to criticism from the economic point of view in certain respects. Though it stimulates individual initiative and enterprise in the younger sons of the family, it acts more or less as a solvent of the solidarity of family life, which is such a marked feature of the Indian social system. Again, it is also open to some of the objections that have been advanced against monopolies and entailed property by the jurist and the sociologist. The concentration of property in a few hands not only militates against that general diffusion of well-being and advantage, the aim of modern social legislation, but also creates a spirit of strife and opposition among the Have-nots, who have been defrauded of what they think their just claims in society.

The land system itself, again, is also responsible to a great extent for the minute subdivision of property. Under the system of peasant proprietorship, the ryot has become so strongly attached by the most sacred and deeply-rooted ties to the soil that, rather than relinquish his hold on it, he will burden himself and his heirs with debt for generations; and gradually under the Hindu practice of inheritance the holdings become so minutely subdivided and overburdened by mortgages, that extended cultivation and high farming are made almost impossible. An analogy may be found in the law of equal inheritance and its economic effects in France.

Again, though, the one great advantage that the small farmer has as a rule possessed is inherited and empirical skill; this is, however, useful under conditions fixed by custom, and may, when conditions are changing, prove an obstacle in the way of improvement. In Indian agriculture the conditions, in fact, have now greatly changed, and the small farmer, being unable to adapt himself to circumstances, has become much worse off.

The joint-stock system has secured a characteristic co-operation of the family members in our society, which, though advantageous at first, is detrimental to progress in a higher state of industrialism. In the agriculturalist's family the women are found freely to assist the men in field work, sowing the seeds, weeding, or assisting their husbands in irrigating the fields. In Behar, where the pressure of population has led the males to emigrate to Bengal for work, the woman leads a more secluded life, seldom taking an active share in outdoor work, and the seclusion is greater as the family is richer or the caste higher. Agriculturalists' wives will on no account come to the fields in which their husbands work, the breakfast being brought there by infant girls or old females, usually the mother. As a rule females do not work in the fields, except the very old or very young, who are sometimes deputed to tend cattle in plots adjoining to homesteads. But the women may be sometimes seen employed in thrashing out the grain, winnowing, or stacking the hay. In her house, however the woman

works the whole day. She cooks the food, and makes all necessary preparations for that process. She has also to grind the wheat or the pulses on the *janta* or husk the rice on the *dhenki*, and if she has any leisure, she spins cotton or silk threads, or twists the san, coconut, jute, and rhea fibres into ropes. If it is an artisan's family, the woman can assist in the husband's work more materially. The weaver's wife cleans the thread and arranges the warp and woof. The oil-presser's wife manages the bullock and runs the *Ghani* when the *Kalu* is working in the fields. The silk-rearer's wife diligently and carefully feeds the cocoons. The tailor's wife uses the sewing-machine when there is hard work for the family. The laundress herself washes the clothes in the tanks. The banglemaker's wife makes the slow fire and rolls the lac rods into thin pencils. The *Muchi's* wife helps her husband in the collection of hides and skins. The *Dom* woman weaves the baskets. The potter's wife collects and prepares the clay. In some cases, again, the woman does much of the labor of carrying the goods for sale at the market. Thus bangles are sold exclusively by women. The fish-woman is better at bargaining than her husband. The laundress carries the clothes to the *Zenana*. The milk-woman and the oil-presser's wife also carry their products to the inmates of the rich man's household.

The boys of the family also are all usefully employed. They do most of the work of pasturing cattle. They collect fuel and manure, milk the goat, and

sometimes cut grass for the cows. The girls at their father's house have not to work much. In the artisan's family the boys, like their mother, can do more work. They are early trained as apprentices. In Madanpura, Benares, I saw boys and girls of four or five years arranging the *nakhsa* threads by means of wooden handles, and thus helping their father in his weaving. Thus the boys are trained in the craft quite early, and they begin work as soon as they learn some of its rudiments. The system, while it provides for all the family members, gives each his place and occupation, so that his services can be best utilized in the interests of the family. But the family co-operation is advantageous in the first stage, only for production on a small scale. The division of labor being confined to the small family group, there are none of the economic advantages of co-operation and division of labor in society on an organized scale. There is little scope for the utilization of capital. The wealth that remains after providing for the few agricultural implements and seed and manure, or artisan's tools, goes to bedeck the persons of women, or is spent on family property which may be deteriorating. New investments of capital are disliked. The system discourages individual initiative, and consequently there is loss of personal energy. The stimulus to individual exertion being not very great, progress is difficult. Thus the organization has lost much of its older vitality, now in a stage of industrialism dominated by ideas of individual gain and by the passion for personal advancement.

## 5. The Social Transformation of China\*

*By Dakuin K. Lieu*

In discussion of Chinese social questions by Chinese writers, a very common fault often occurs, i.e., idealization. Our people seldom, if ever, insist upon scientific accuracy, especially in dealing with social problems, where feeling enters into all calculations, and where we are accustomed to see things as they are represented in an idealized form as found in ancient books. We do not see things as they are, but as they exist in our imagination. When, therefore, we compare Chinese social institutions so idealized with corresponding Western institutions laid bare with all the faults that human creations are heirs to, ours naturally assume an appearance of superiority. A case in point is to be found in a recent editorial in a leading Chinese magazine. In that editorial free marriage is criticized, because of the abuse of the freedom and the consequent frequency of divorces. Inter-sexual relations in the upper-class Chinese society, as it remarks, reach the other extreme, and the happy medium exists only among our working people. In their society men and women mix very freely in social intercourse, and yet they never fall into the fault of free marriage. It is wonderful how one living so long in an industrial center can be so blind to the deplorable moral conditions of

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\*Dakuin K. Lieu, *The Chinese Social and Political Science Review*, Peking, September, 1917. Reprinted by permission.

the Chinese working population! He conceives the social conditions as he imagines them to be, not as they actually are. It is to remove such wrong, idealized conceptions and prepare the ground for further discussion about social reform that the following paragraphs are written.

*Family vs. Individual.*—It has become an almost universally accepted truism among our writers that Chinese society is based on the family, Western society on the individual, as the unit. Western individualism is a well-understood doctrine, although it deserves careful scrutiny. The Chinese family system is variously represented as a survival of the primitive clan, as the same simple primary group that a Western family stands for, or as the ideal social unit with which Western sociologists hope to supplant their individualism. Idealization may be either for the better or for the worse, the first two representations being of the latter kind. None of these, however, is based on a careful study of actual facts. The Chinese family may retain some appearance of the primitive clan system, but it is far beyond that stage of social development. China has not been at a standstill, especially in her social organization. In fact, her family system has undergone an even fuller development than the corresponding institution in the West. By fuller development, of course, we do not necessarily mean the attainment of a higher standard, but only of a more complex form. To consider these two as identical would be accepting



the biological theory of social evolution. The Chinese family is merely a more complex social organization than the Western family, and the complexity can be shown in many ways.

*The Chinese Family System.*—Language is a good indicator of social development, showing the degree as well as the direction of that development. In the Chinese language, every family relation (as distinguished from other social relations to be discussed later), near or remote, by blood or by marriage, has a specific name. An uncle on the paternal side is known by one name, the husband of an aunt on the same side by another. The two corresponding relatives on the maternal side have again other names. An uncle who is the brother of the father is known by a name different from one who is a cousin, and that again different from those one, two, or three steps further removed. An older uncle (older than the father) has a different name from a younger one. But for all these there is only one word in English as well as in most other Western languages. There is only one term, uncle, for all sorts of uncles; the same thing is true for aunts, nephews, nieces, brothers-in-law, sisters-in-law, cousins, etc. The last named, cousin, is still more indefinite than the others. It does not even show any difference in sex or in rank (in such terms as first cousin, second cousin, etc. By rank is meant the difference of generations). These Western terms are sometimes modified by additional words to denote more specific relations, but in general

usage they are vague in their designation, and it is the general usage of words which reflects the social development of the race. The same testimony shows the undue emphasis in the Chinese mind of the relation between man and man and the neglect of the relation between man and nature, resulting in the under-development of science and materialism. As this is an even broader subject than the one at hand, it will be more fully discussed in another connection.

A second thing showing the complexity of the Chinese family system is a custom which has existed down to the present day, notwithstanding the process of disorganization now at work. Regarding any important family affair, as a question of adoption [of a child, especially by the "chief branch" (長房) of the family] or inheritance, the different kinds of relatives have very different kinds of rights and privileges. At any great social function, as a wedding or a funeral, the costume, the position, the duty, the order, the kind of present, the manner of expressing congratulation or sympathy, etc., are all different with different relatives. Elaborate rules (五禮通考) govern their conduct, and slight though the relation may be, they are different from mere friends. Moreover an individual's social standing is not determined by his character and that of his immediate relatives, but by the standing of a large number of his relatives, near and remote, by marriage as well as by blood. Indeed, the solidarity of this peculiar family organization is such that it is fully

recognized by law. From the Tang Lui (唐律), the first comprehensive legal code of China, down to the Ta Ching Huei Tien (大清會典) of the Manchu dynasty, every man is held responsible for the good conduct of each and every one of his relatives, and the degree of the responsibility is determined by the degree of proximity of the relationship [in fact such law existed as early as the Chin (秦) dynasty, though no difference in degree was carefully made]. Thus, in law, in custom, and in the usage of the language, there exists a complex, close-knit, time-honored institution which forms the basis of Chinese society, and we may call it the Unit Family or Greater Family.

*The Unit or Greater Family.*—We may now venture a definition of our social unit. It is a large, shifting organization, including all kinds of relatives, both by blood and by marriage, centering round some particular individual as the nucleus, and differing in composition with different individuals. Let us take for illustration the Chia (賈) family of the famous novel "Red Chamber Dream." The constitution of Chia Cheng's (賈政) family is different from that of Chia Pao-yu (賈寶玉); the latter from that of Chia Lien (賈璉); and the latter again from that of Chia Yung (賈蓉), Chia Hsieh (賈赦), Hsueh Fan (薛蟠), or Chin Chung (秦鍾). The family that has most of its members described in the book is that of Chia Pao-yu, the hero of the story, while all others are imperfectly represented. Each of these men includes a new set of people in his "greater family" and even where

the people are the same, their social status is changed. Instead of being a nephew in Chia Cheng's family, Chia Lien becomes a cousin in that of Chia Pao-yu, an uncle in that of Chia Yung, and a still different relative in those of Hsueh Fan and Chin Chung. Hence these families are different social organizations from one another, just as a partnership merged into a corporation is different from itself under the old form, or the present Chinese Republic is different from the Manchu Empire. These men themselves form the nuclei of the respective organizations. Besides, the domestic servants to some extent form part of the organization, since their status is defined by law and custom in connection with the unit family.

From the above it is plain that the Chinese unit family is not such a simple organization as the Western family or the primitive clan. It is as different from the clan as modern written language is different from Egyptian hieroglyphics. To say it is the ideal social group of the Western sociologists is also far from the truth, for such a clumsy organization is not without its faults, and the faults are in some cases very serious. The legal, social, and financial responsibility for relatives prevents development of the spirit of adventure and initiative, an important factor in social progress. Under the system, also, the most important social relationships of a person are mainly involuntary. Blood relations are of course not determined by one's volition, while marriage relations, being chiefly arranged by people

other than those immediately concerned, partake also of an involuntary character. Human choice therefore has little influence on the organizations of society, and people are unconsciously converted to fatalism. This explains the stable character of Chinese society (from the Western point of view) down to the present time, but at present the whole system is gradually breaking down, opposing doctrines and contradictory standards are waging war with each other, and we are on the verge of a great social transformation.

*Western Individualism.*—Chinese society, it is supposed, will after the transformation be like Western society, which is said to be based on individualism. This latter statement, however, invites criticism. A society is based on the individual as the social unit only when social relations are not differentiated and all individuals are socially equal. These conditions only obtained in primitive, pre-historic times, when human creatures lived like wolves in hordes and gangs, went about hunting without a leader, and lived together without even a totem. Each man made his own kill and each woman did the same. Then, and only then, was there pure individualism. That word in its strictest sense means the absence of any social organization, or, according to the strictest sociological concept, individual is only another aspect of society.\* From both points of view, there is no meaning in saying that modern society

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\* Prof. C. H. Cooley, "Human Nature and the Social Order," Chapter I.

is based on the "individual" as the social unit. The social relations in Western society are as complex and as unequal\* as ours, only they are chiefly voluntary, and it is the voluntary character of the relationships, bringing into prominence the exercise of personal choice, that makes Western society appear to be "individualistic." By analyzing its organization in the same way as we have done ours, we shall see that the social unit there is neither the individual, nor the family, but something different from both.

Confucian ethics recognizes five main social relations; namely, father and son, brother (older) and brother (younger), husband and wife, ruler and subject, friend and friend. These, including all their ramifications, e.g., grandfather and grandson, uncle and nephew, etc., fail to comprehend many important social relationships of modern society. They only show the one-sided significance placed by Chinese moralists on family relations, as three of the five are of that nature. Western ethics, on the other hand, does not try to enumerate and classify social relations at all, but many of them affect the daily life of the modern man and are recognized by Western custom and law and the usage of Western language. Mr. A. works in a certain firm and is the employee of the proprietors, who are his employers. He buys his daily necessities from a number of tradesmen, and in each case he is the customer of the

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\*Prof. E. A. Ross says that Oriental relations are unequal, Occidental equal. To this the writer cannot agree. .

dealer. He lives in a house belonging to some local resident, and the relation here is that of the tenant to the landlord. He deposits his surplus income with a banker who becomes the debtor and he the creditor. He may invest the money in a different way in shares of some joint stock company, and the relation of the shareholder to the director comes into existence. His life and property receive the protection of the government, more particularly the city government, because it is the local police which protects him against robbers and outlaws, and, when he has any complaints, he goes in the first instance to the local court. The relation here is that of the government and the citizen. The municipal government also provides him with many necessities and conveniences, such as water-supply, street-lighting, public thoroughfares, public conveyances, telephone communications, sewage system, etc. When any of these is under private management, the public utilities are under special obligation, therefore in special relation to the public, as provided for in charters granted by the municipal government. The government is partly composed of men elected by the local inhabitants, and Mr. A., having the right to vote, is to the candidate as a constituent. If Mr. A. is sick, he goes to some local doctor; if he has any legal trouble, he goes to some local lawyer; and these practitioners take him as their client. All such relations are of special importance to Mr. A. of modern society, and more problems arise from them than from his relation to Mrs. A. or the A.

juniors. As to his third cousins or brothers-in-law four steps removed, he has very little to do with them.

*The City as the Social Unit.*—A significant fact about the above relations is that they exist mainly in the city. Mr. A.'s every day life is most directly affected by his relations to the other inhabitants of the same city, and by the social conditions of the city as a whole. These civic relations—to use a term to distinguish them from family relations—determine also his social standing, and the distinction of the average inhabitant of the locality. It is true that some of the relations mentioned above extend beyond the city limits, while others, especially political relations, have been for some time national in scope. But national political relations are based on civic relations, and no national government can, down to the present stage of social development, supersede the municipal governments, while states, counties, cantons, provinces, departments, or principalities may be and have been abolished at different times. Those relations which extend beyond the city limits are mostly economic relations, because in the new form of industrial organization impersonal relations have increased more rapidly than personal relations. Still, personal civic relations are to be found at the root of all business. Employers deal with their employees through directors or managers who are personally related to the latter and reside in the same locality. In most investments, the personal relation is established through some broker or some underwriting banker. Public



service corporations (meaning not the fictitious, soulless entity, but the men who are behind them) are personally related (in the case of common carriers, for instance) to the passenger or shipper through the local station-master or some other local agent. The tendency of present day legislation is to emphasize the personal relation in order to fix responsibility on the men who control or represent the corporation, instead of the fictitious entity. There is, therefore, always the personal element in the long chain of modern social relations, when we trace it link by link. The chain may extend beyond the city, but the immediate links always lie within its limits. Finally, the very fact that this transcending of city limits often results in social disorganization is a good proof that the city is the unit of Western society. [Some would think of the Chinese relationship of Tung-hsiang (同鄉), but that applies only to those who have lived in the same city for generations, and not to temporary residents. Lineage is still the *sine qua non* of this relationship].

As the unit family of China has its origin in history of centuries ago, so also is the city closely associated with the past development of Western society. The Greeks, the pioneers of European civilization, first founded city states. These represented the *summum bonum* of their social organization. The great Roman Empire centered around the Eternal City, and wherever Roman civilization spread, cities sprang into existence. The Dark Ages corresponded to a period when cities did

not flourish, but they resumed their importance with the Revival of Learning. Since then they have played a more and more important part in European and American history. The idea of representative government had its origin in town meetings, and world commerce was opened up by the medieval city republics. Cities, in fact, have contributed more to Western civilization than any other form of social organization.

Moreover, the history of Western architecture and engineering, showing the amount of attention paid by the occidentals to city life, is another proof that their social organization is based on this unit. Among the Greek city states, Athens was pre-eminent in architectural beauty, and its finest structures were temples, citadels, public market places, public assembly halls, public cemeteries, gymnasiums for public instruction, and theaters for public amusement, the Parthenon, the Erechtheum, the Olympium, the Forum, the Stadium, the Lyceum, the theater of Dionysius, and so forth. The public mess of Sparta was only another step in the same direction. The Romans paid even greater attention to public works. The Eternal City, at the height of its glory, contained 420 temples, 5 regular theaters, 2 amphitheatres, 7 circuses, 16 public baths, and a large number of aqueducts and fountains to supply water to the public.\* Arches, monuments, and obelisks adorned the public squares. Similar things were to be found in

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\* Compare these not with modern cities but with ancient Chinese cities.

Venice, Genoa, Florence, and other city republics of the Middle Ages. Venice had in addition beautiful canals and bridges; Lorenzo Medici founded a public library. Public parks were found in the plans of most cities of that period, and since then municipal works have advanced with great strides, until now a great part of the necessities and conveniences of life is furnished to the inhabitants of a whole city under a common system. On the other hand, Chinese municipal engineering has hardly undergone any development, while Chinese architecture pays special attention to the construction of home gardens, instead of public buildings. Streets are allowed to become dilapidated, and street lighting, public water-supply, public sewage systems, public museums, libraries, and parks are unheard of. The contrast of China with the West in these aspects has led some critics to blame our people for selfishness and lack of public spirit, although the underlying cause is really the peculiar form of our social organization. Once the social transformation is successfully carried out, the condition will be changed.

*Social Control During the Transformation.*—Social control is necessary at all times, but especially so during a period of transition. Although various means of control are available, two of them are of special interest, being more often discussed by Chinese writers. Ethics and law are placed in contrast, and some advocate the one and some the other. In the past, no doubt, ethics has played a much greater part than law, but it is slow

in being adapted to new conditions. If Chinese society is to be re-organized on the basis of the city, as it must needs be, Confucian ethics, which has little consideration for civic relations, will be inadequate as a means of control. At the same time, it is harder and slower to adopt Western ethics than Western law, and Western ethics is at best indefinite,—indeed, more indefinite than ours. On the other hand, law affords very definite rules of conduct, assigns definite status to different kinds of modern social relationships, and can be adopted by definite processes of legislation. During a great transformation, when contradictory principles strive for ascendancy, definite standards need to be set up; and this setting up of standards can best be done by law. Moreover, modern law takes into account the diversified character of human institutions, and preserves order by reconciling diversified interests. Chinese ethics, on the contrary, encourages uniformity and minimizes voluntary relations, not knowing that diversity and choice are important conditions of social progress. It is, therefore, ill-adapted to a period of swift changes. For these reasons, law is to be preferred during the transformation as a means of social control.

The last point of discussion, though certainly not the least in importance, is the extent to which the transformation should be carried out. There is no doubt about the nature and necessity of the change, for the tide of disorganization, as a result of the growth of modern civic relations, has already set in, and we are

drifting toward the Western type of society. Yet few, if any, would wish the country to be entirely Europeanized or Americanized, throwing away all her past achievements and her long-cherished ideals. Social organization no doubt should be based on the city as the unit, voluntary relationships should be given due recognition, and more reliance should be placed on law for the preservation of social order; but family relations need not be neglected, nor Confucian ethics thrown overboard. By a proper combination of the Eastern and Western civilizations, with society remodelled to suit both the historical background and present day requirements, a new regime will come into existence, which will be not only superior to the old regime of China, but also to that of the West. A full discussion of the degree of combination with specific reference to the different social institutions will form the subject of a separate article. The resulting changes constitute what we mean by the term "social transformation."

## 6. The Restoration of the Village\*

*By Radhakamal Mukerjee*

No scheme for the resuscitation of the small industries is complete unless it includes measures for the improvement of village life. Whether in India or the West the decline of the small industries goes on *pari*

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\*From "The Foundations of Indian Economics," Longmans, Green & Co., London, 1916. Reprinted by permission.

*passu* with the decline of small scale farming. On the other hand, in countries where the number of small proprietors multiplies, small industries grow and develop. In England the destruction of the home industries is more due to the rural exodus and agricultural decline than to any other causes. On the other hand, the prosperous and energetic agriculture in France has been a support to the village industries. The number of small cultivators in France turn to various small industries in addition to agriculture as supplementary sources of living. Thus small industries in France represent a valuable characteristic feature of the economic organization. Indeed any steps taken toward the improvement of agriculture, of assuring the peasant's rights in the land, or for creating an intellectual life in the village, will always tend to promote the growth of the small industries.

One of the most important economic problems in India is the decline of the village. Unhappily this problem has not sufficiently attracted the attention of the educated Indians. And yet India is the land where the village and not the city has been the center of civilization in the past. In India more than in any other country the great intellectual, social, and religious movements have originated in villages, and nurtured by their thoughts and aspirations, at last reached the cities. The soul of India is to be found in the village, not in the city. In modern Europe, on the other hand, the discoveries in intellectual and social life are made in

the city and are then communicated to the village, which receives them as gospel truths. The city sets the example. The village imitates. The city in the West controls all the springs of social life. The village has no separate social life of its own. The city has its own fads, crazes, and "isms," and these are accepted by the whole country at large. The tastes and fashions of the village are regarded as idiosyncrasies, and therefore checked. Thus every trace of the individuality of the village, every local peculiarity of life and thought are destroyed. Village arts and industries, village customs and ceremonies, village pleasures and amusements, village dialects and folk-lore, popular tales and songs,—all these which tend to give expression to the individuality and peculiar temperament of the village are discarded. Village habits of life go out of fashion. The village loses its individuality, its soul. The note of village life is drowned amidst the loud echoes from the city.

When one phase of social life tends to control the other phases, civilization is in danger; for life implies variety, and culture consists in the blending of diverse types. If one type predominates, and the other types are not developed, culture declines. This has been the result of what Professor Royce calls "the bleaching process" in the West. There the characteristic habits of life and thought of the village are now being superseded by urban ways. Life in the village tends to correspond to life in the city. Instead of diversity a dull uniformity

devoid of life is attacking society. Society, instead of being enriched by a homogeneous blending of diverse types, is developing a single type. The approximation toward a single type is sapping the roots of life and culture. Thus society is becoming all the poorer.

The questions that present themselves to an Indian sociologist in this connection are these: What should be the relation between the city and the village? What are their respective lines of development? The West in its mad exaggeration of the division of labor has created a distinction in type between rural and urban life. The village produces the food of the nation and all the raw materials of industry. The city manufactures in its factories and sells the finished product in its shops. The village gives birth to population and energy. The city uses the raw materials of social life; the village is a field for exploitation. Rural life has no separate existence of its own, its existence is for the city. The modern industrial and social ideal is to suck out everything that is best from the village into the city. As in the system of production the worker is a mere servant to machinery, so in the system of social organization the village has submitted itself to be a slave of the city. An undue division of functions has thus been established in Western society. It is not good for a man to be riveted for all his life to a given spot for making "the eighteenth part of a pin." It is not also good for the village to be specialized permanently. There has been an increase of urban gains as a result of the division of



functions between city and village. But true efficiency, culture, and well-being are sacrificed.

The village, like the city, should live a life of its own. The village should be a living, self-conscious part in the social organization, a partner with the city in the highest enjoyment of art and science, of creation and use. Technical knowledge and industrial commercial organizing capacities should not be the monopoly of the townsmen. Each village must cultivate scientific knowledge, together with the knowledge of agriculture. It should develop industrial aptitudes, together with the patience and assiduity required in the work in the field. Thus some manufacture or industrial art should be combined with agriculture in order that the rural economic organization, while creating wealth for the community may also develop the industrial qualities which it really needs. In the industrial world of the West disparity of wealth and technical skill between town and village is striking. There is a superabundance of capital and mechanical skill in the town; while the village suffers for want of capital and business knowledge. The city almost monopolizes science and enterprise; the village is backward because of the ignorance and lack of enterprise of the people. Such are the inevitable results of a too rigid adherence to the principle of division of labor. It is not to the interests of culture that the village should permanently be the hewer of wood and the drawer of water for the city.

In the system of production, the permanent division of functions between producers and consumers, and amongst the former between capitalists and laborers, has led to grave social evils. A protest against this has given birth to socialism. Socialism aims to establish the integration of functions. In the socialistic order the watchword is not division but integration of labor. Differentiation has been the watchword of orthodox economics. Socialism proclaims combination. In the socialist state the consumers are their own producers, themselves jointly owning the means of production. Thus socialism abolishes the orthodox division of people into well-defined classes or new "castes" such as producers and consumers, laborers and capitalists. Industrial co-operation, again, is a step in the process of integration, inasmuch as it effaces the distinction between laborers and employing capitalists. Distributive co-operation is a further step in the same process. It affords the basis for organizing distribution and production with laborers working under the control of the consuming members. Not only socialism but co-operation as well will profoundly affect the present industrial system based on the principle of division of labor. They will usher in a new industrial organization whose watchword will be integration of labor. Both the social organization and the industrial system of the West represent the second stage in the process of evolution. From homogeneity the progress has been toward differentiation. Integration will represent the

final term of the progression. In industry, after a period of an ever-increasing division and sub-division of functions, the tendency toward a synthesis is apparent nowadays in socialism, as well as distributive and industrial co-operation. In the social organization also, the tendency is manifest in the growing interest in village life, a fuller appreciation of the immense value of agriculture and village industries, the arts and crafts movement and co-operative work. In cities the tendency of bringing the factories to the villages, which has found expression in the "Garden Cities" movement, is also significant, representing another phase of the integration process. In future the rigid differentiation of functions between city and village will be checked. Science and art, mechanical skill and business enterprise, will not be confined to the city. Industrial arts and handicrafts will flourish in the village side by side with agriculture. Industries in the city will not have to be fed by hands taken from agriculture in the village. The countryside will utilize the labor of engineers and inventors. Knowledge and capital will be distributed throughout the country.

As the process of integration in the industrial system represented in socialism and co-operation removes the unequal distribution of wealth among producers and consumers, integration in the social organization represented in rural movements will abate the disparity of wealth and culture between city and village.

In India the differentiation between city and village life was not sharp. Here the unit was and to a great extent is still the family, sociologically speaking, and the land territorially. Our industrial structure rests on the family and land basis. Thus India's economic unit has been the family of the small cultivator. India is the land of small holdings. The joint family, the system of land tenure and the law of inheritance have all combined to make our country essentially the land of small tenantry. Here the land is not left in the hands of great landowners, who are often more busy with their shooting preserves than with their tenants' holdings. The small cultivators here enjoy the land and the fruits thereof. The proprietary instinct of the individual in India, again, is much weaker than in the West. Its aggressive character has been tempered by our law and social institutions. In fact, the Roman Jurisprudence, by its emphasis on private property and by its law of the sacredness of creditors' rights over and against debtors', and the Gothic and Frankish customaries, by the feudal organization of land tenure, have given a disproportionate importance to the proprietary instinct; indeed, in some ways, a wrong direction to the development of Western nations and states. India, therefore, has not yet experienced to the same degree the evils of the disparity of wealth and property. The repression of the proprietary instinct and the communistic sense as well as the basal facts of our family and social life have checked the concentration

of capital into fewer hands. Industry, therefore, has not been highly specialized. The factory has not developed. Agriculture has been more important than manufacture, in agriculture the small peasant proprietor is more important than the landowner, and cottage industries supported by agriculture have flourished. Where the ideal of "specialization," "centralization," and "concentration," does not dominate industry, we have not to witness the unfortunate spectacle of rich, pampered cities, the seats of prosperous manufacture, side by side with deserted villages "where men decay." In India villages, like cities, have been the repositories of knowledge and wealth, of science and technics. City and village have progressed on nearly the same lines. There has been no difference of type between city and village. Both have lived and progressed by mutual aid and association.

But a profound change has now affected the Indian village. The Indian village is no longer full of life and vigor, supported by an energetic agriculture. It is fast becoming a scene of dreariness and desolation, while the city is being congested with the influx of population from the village. Life and progress are manifest only in the city. Capital, mechanical skill and knowledge are monopolized by the city, the village is suffering from dearth of knowledge and skill. The impact with the Western civilization has raised the standard of consumption of all classes of society; but productive activity has not increased in proportion. A

system of over-literary education introduced into the country with a view to satisfy administrative needs has created, on the one hand, a dislike for manual labor, handicraft or trade. The middle classes are flocking into the government service, or any sort of clerical or semi-intellectual occupation. There has been engendered a feeling of contempt for manual laborers, whether skilled or unskilled, and a demarcation of social feeling which does not correspond to differences in wages. For the rate of pay of the middle classes is very often little different from that of the skilled laboring class. In India specialized skill and general mechanical ability are in constantly growing demand as manufactures are being developed; while the constant or ever-increasing stream of the middle class which aims at the clerical occupation is gradually lowering the rate of pay of this class. Unfortunately the prejudice that manual labor is degrading to it is very strong, and in consequence those who had previously remained in the village managing and directing its agriculture, industry or trade are now leaving the village in large numbers in search of intellectual occupations in the town. More than any other cause, the migration of this class has created the unfortunate contrast between the stagnation and decline of the village and the life and progress of the city. For it was this middle class which guided and controlled the social and intellectual life of the village peasantry. When they have gone there are none to look after the common interests of the villagers. . . .

The common pasture land is wrested by the landlord from the hands of the villages, and there are none to protest. The village money and grain lending trade is transferred from the hands of local people to those of outsiders, *Kabulis*, *baparies* or middlemen, who are agents of big European exporting firms. These come gradually to control the distribution of food grains. Their sale of crops to outside markets is guided by no reference to the interests of the villagers. The rates of interest are often exorbitant and the relations between debtor and creditor which were formerly based on status now rest on a competitive basis. Food crops are exported from a village even if a famine be imminent or actually raging in it. Thus the village industry is exploited by outsiders when the middle class has left the village to look for their own prospects in the city. The peasantry instead of growing food grains are encouraged by payments in advance from merchants and middlemen to grow materials for export, and are thus left without any reserve of grain to tide over periods of scarcity or famine. Not only is industry now diverted from its natural course of conducing to the welfare of the village, but its intellectual and social life also are now jeopardized on account of the migration of the flower of the rural population to the city. The communal gathering in the hall of the village temple has declined in importance and strength for want of patronage and support. Perhaps the villagers used to meet previously in the audience hall of a rich magnate; his building is

now deserted and has become a haunted house where owls and pigeons live together. The recitation of the Ramayana, the Mahabharata, the Bhagabata and the Chandi, which was usual every evening in the village hall, has to be discontinued for lack of funds. The *yatra*, or musical play, which along with the *sankirtan*, or singing of God's praise, and the *kathakata*, or story telling, played such an important part in educating the masses, has also declined due to want of patronage. There was a time when even the *yatra* or the *kabigan* or popular songs uniformly reflected the principal trends and tendencies of the thoughts and aspirations of our people. But they are losing touch with the national life. Cowherds and confectioners, boatmen and fishermen, common peasants and artisans thought so deeply and sang so well that they drew, evening after evening, crowds more enormous than those which now gather around the modern stage. These men were unlettered, yet it would be a sin to call them uneducated. These plays and songs have now degenerated both in form and in spirit. The character of a play or a song depends to a very great extent upon the character of the audience. When the upper middle class has left the village and lost any interest in musical plays and parties, the musicians and actors have depended on the support of the populace. The withdrawal of the patronage of the middle class and of its moral influence has forced the lowering of the standard of the plays and songs. Their subjects also are becoming more and more of village



interest only as the middle class ceases to have social intercourse with the village playwrights. Again, the village *kathakata*, or story-telling, which is the traditional vehicle of popular instruction, has also fallen into neglect; yet it goes without saying that popular education is better imparted by means of oral lessons than otherwise. The *kathak*, or village story-teller, is adept in the art of public speaking, and the songs which are interspersed between his lively discourse have a very impressive effect on the village audience. This excellent method of popular education is now almost extinct for want of patronage. Nor can we overestimate the evil effects of the migration of the middle class on the social life of the village. There was in every village an arbitration court conducted by the leading men of the village which decided petty quarrels and disputes and even contributed very largely to promote amity and fellow-feeling among the villagers. The arbitration court has been dissolved as the influential persons have left the village, and party feeling and animosity have become rife in the village. The spirit of association and fellow-feeling which characterized our village population is disappearing. Large sums are now squandered away to fight lawsuits which could easily have been decided by the arbitration court. Again, village institutions which were previously supported by village funds and labor are decaying. Village temples are without repairs, *sankirton* or musical parties have become irregular in their sittings. Rivers have silted

up and weeds have grown thick on them. No new tanks or wells are dug, and good drinking water is scarce. Cattle die by hundreds and cholera rages as an epidemic even in the hot season. Schools have been closed. The householders' habit of setting apart a handful of alms every day to defray the cost of a school or a religious festival is being discontinued. The middle class has left the village for good, and there are none to teach the value of self-help and co-operation, and to fight against mutual distrust and apathy. Those who keenly looked after the welfare of every villager, shared their joy with him on a merry occasion, and consoled him in his sorrow, whom every villager regarded with a feeling both of awe and reverence, are now gone forever. To whom shall the villager now turn in his need? Who will now tide him over his bad times by giving him a loan free of any interest, or give him employment when he wants such? From whom shall they seek consolation in sickness, or in despondency, who will be their refuge in a great bereavement? Who will look after the aged widow, the solitary grandfather or the helpless orphan? Who will administer medicine and tend the sick with the most assiduous care, however humble they may be? Who will arrange *sankirton* parties, lead them around the village during an epidemic and give peace to the panic-stricken people? Who will conduct the village religious festival and feed the poor and the forlorn, having always a kind word for each? "Who will help

the man with the hoe, bowed by the weight of centuries he leans, the emptiness of ages in his face, and on his back the burden of the world ? ” Who will exchange smilingly a few encouraging words with the careworn peasant heavily in debt as he plods his weary way homeward after a hard day’s work ? And again, who will act as the censor of the village, punishing moral delinquencies, omissions of duty towards the family or the caste ? Who will insist on the performance of social duties by example and by precept, lead the villagers to build or repair a thoroughfare, or an embankment, or improve the course of a river that has silted up ? Who will look after the drainage and irrigation of the village, prevent malaria, or check the spread of an epidemic by taking wise precautionary measures beforehand ? And who will see that no villager commits any indiscretion that might endanger the health of the whole village ?

The middle class, indeed, was the repository of the people’s confidence. It was this class which led them, initiated their movements, and taught them to work for common objects. They undertook the noble task of helping the people to help themselves, and they achieved their object. Real leaders of the people as they were, they did not check the initiative and independence of the people, but encouraged free activities. Smiles has said : “ The highest patriotism and philanthropy consist not so much in altering laws and modifying institutions as in helping and stimulating men to develop and

improve themselves by their own free and independent individual action." Thus the middle class performed the noble mission of elevating the social and intellectual condition of the villagers.

And the middle class was not unproductive. It was this class which planned and directed the work in the field, managed and organized the rural trade, and to a great extent financed rural agriculture and industries. In fact it formed the very backbone of the agricultural community. But the work of directing rural agriculture, trade, and industry has now ceased to have any attraction for it. The ideas and ideals of Western life, which are not altogether conducive to our social well-being, have created a profound revolution in the minds of the middle class. The standard of consumption has certainly been raised, and none have waited to consider whether the rise in the standard in imitation of the West implies an increase of culture and well-being or not. The pleasures of town life have been too fascinating. Men prefer semi-starvation in the town to a competent living in the village. The cost of living in the city is more than twice that in the village. Still, a position in the city with no prospects, and a pay hardly sufficient to defray the expenses of a single individual, is more alluring, and the paternal property and orchards are all neglected. The joint-family system is broken up, and the individualistic system of the West is adopted. The small earnings of clerks, railway officials, bookkeepers, and the like cannot be shared by all the members of the

family. Thus the family is becoming individualistic. The individualism of the West at its best has been a stimulus to productive activity, and a nurse to manliness, initiative, and enterprise, virtues which are so conducive to the industrial success of a nation. The individualism of India is becoming too much a mask of selfishness, a desire to shirk the responsibilities of the joint family life in order to enjoy selfishly the pleasures and luxuries of the city. It has not created any new independent careers of livelihood; it rests on service of the government, and it has diminished productive activity. Not deriving its strength from productive enterprise, our individualism is not only militating against our joint family, but threatening family life itself to a grave extent. In the chief cities people flock in large numbers for service and employment, and they annually leave their families in native villages. In the whole population of Calcutta there are only half as many women as men. This is due to the large number of immigrants, among whom there are only 279 females to 1,000 males; the majority of these are temporary settlers, who leave their families at home. Another result of the large volume of immigration is that 44 per cent of the population are male adults, which is double the proportion for the whole of Bengal. It is unquestionable that the disproportionate excess of adult males over females is one of the causes of city vice and immorality; and Calcutta is not free from this grave social evil.

Such are in general the effects of the immigration of the middle class on our villages, and also on our life and activities. People speak of the "drain" to England; few, however, dwell on the economic effects of the drain of all skill, enterprise, knowledge, and wealth, from the village to the city. The drain from the village to the city has paralyzed all economic activities in the villages, and diverted the enterprise of the middle class to an unfruitful channel. Our cities have grown enormously, but they are becoming too much mere excrescences on our body politic, the character of which is still essentially agricultural. In the city, though the middle class is gradually coming to participate in its trade and manufacture, yet the number of persons that is engaged in government service, professions and in lower intellectual occupations is unfortunately quite disproportionate. In the village, agriculture is declining, and agriculturists are becoming day laborers. Our peasants are unfit for strenuous and sustained work in the factory. In Bengal and Madras, which are the most prosperous provinces, the factory hands have to be recruited from elsewhere. Thus the factory industries of the province do not offer means of livelihood for local peasants. They therefore migrate to the cities to become domestic servants, or cling to their native village, however harder be their lot there, working on the land of richer cultivators or landlords during the busy seasons of the year. The incapacity of local laborers for factory work in Bengal has not only impeded the progress of factory industries;

but has indirectly contributed to lower the factory environment. The demand for factory labor is met by immigration, chiefly from up-country, the United Provinces, and Behar. Among these foreigners there is an enormous excess of males, who outnumber the females in the ratio of two to one. They migrate to Bengal to work in the factory, and live like beasts, huddled together in crowded lodging-houses. Their poverty leaves them little to spare for rent, and into the bargain the pressure of municipal taxation, which falls heaviest on huts, is heavy enough. Under these circumstances it is no wonder that the modern factory life here is becoming associated with every kind of vice and brutality.

Thus in India the village is being destroyed and the poverty of the agricultural population is becoming intense. In the West the depopulation of the rural areas has been accompanied by an enormous growth of manufactures. In India the desertion of the land and the ruin of orchards have not been accompanied by any proportionate advance of manufacturing industries. Only the passion for government service and urban employment has increased. Towns have become the fields for such occupations as well as the centers of that education which opens them up for the middle class. The villages are no longer the centers of intellectual activity; they have become associated with all that isolation and decay usually imply. How to bring back life and progress to our villages is one of the most serious

economic problems of the day. In the West they have their schemes for the regeneration of rural life, the small holdings movement, "inner colonization," etc. In India the land is held by small farmers. The number of small cultivators has been estimated to be about 26,000,000. Thus in India a modification of the system of land tenure is a far less important question than it is in the West. Not a change in the social structure, but a change of character, a higher economic, social, and moral standard of life of the rural people is what is required in India. No movement is fraught with greater potentialities for the moral and economic betterment of villages than co-operation. Co-operation not only leads to economic progress, it creates greater social force through mutual effort, and greater economic knowledge through practical instruction. It offers fields of work and employment for the intelligent middle class in village life, and gives them opportunities to work in the village for common ends. Moreover, it leads to a higher moral development through the need of being equitable. Not only rural economy, but rural social and moral life have been revolutionized by the co-operative movement in Europe. Co-operation has been introduced in India. It would be interesting to know what progress this movement has made in India, what have been its effects on our rural life, and what are the possibilities of its development in future.



# CHAPTER III

## THE ECONOMIC SYSTEM AND ITS DEVELOPMENT

### INTRODUCTION

The different social sciences have different questions to ask of history. The student of political science desires to know the origin of government and the history of the development of governmental institutions. The student of religion desires to know as much as he can discover of the beginnings of religion, of the development of religious institutions and of the differences between religious observances among various peoples. The student of education, of law, and of ethics has his own questions to ask of the past in order that he may understand the things of the present.

The student of economics has before his eyes a certain economic organization. In order to understand it he must turn to history and investigate the origin and development of the economic system. Economic history is this study of the past for the purpose of explaining the economic system of the present. Primitive man had material wants that had to be satisfied. It is important to know how he produced or procured the food, clothing and shelter that he required. Primitive man developed the exchange of goods and at an early

stage in his development he came to use the division of labor.

Man has passed through various stages in his economic development, and these various stages may, for purposes of historical analysis, be separated and studied separately.

In historical times man has passed through important changes in his economic life. The last of these important changes has been given the name "The Industrial Revolution," and it is frequently said that China is now in the midst of such a revolution.

All of these considerations make the study of economic history of fundamental importance to the Chinese student. He wants to know by what stages his people arrived at their present state of economic development. He wants to compare this economic history of China with the economic history of Western peoples and find out if there are not important conclusions to be drawn from such a comparison. He wants to study the industrial revolution in the West and compare it with the changes that are taking place in China at the present time so that he may understand better what he sees happening around him.

Western visitors to China and students of economics in many Eastern countries have expressed the hope that the many evils of the industrial revolution in the West may be avoided in the East. They have based this hope upon the fact that the history of the industrial revolution in the West is known and may be studied.

It is plain that there is little use in entertaining such a hope unless the history of the industrial revolution in the West is studied, and studied to some purpose by the peoples of Eastern countries.

The Chinese economist has at times expressed the conviction that the industrial revolution will not reach China or that, if it does, it will come in a form so modified by the traditions and customs of the Chinese people as to make it a new thing and one that cannot be dealt with as if the conclusions of the West applied. Such opinions as these make the study of the economic history of China and of the West even more interesting to the Chinese student and more useful to those who are truly concerned about the welfare of the Chinese people.

Another reason for encouraging the Chinese student to give careful attention to the study of economic history arises from a consideration of the nature of historical writing in China. Chinese history seems to the Westerner who tries to get some grasp of it, to consist almost entirely of a chronicle of events that get their importance from the fact that they have some relation to the ruling emperor or the dynasty in power. It does not seem to have the people of China for its subject. When the people of the country become the center of the attention of the writers of history and when the material prosperity and the economic development of the country are given their rightful place in the general field of history, it is not too much to say that the history of China as it is now known to the Chinese student will

be revolutionized. Attention to the economic history of the West and some appreciation of the influence the investigation of economic facts has had upon the writing of history will help bring the proper valuation of economic history in China.

The readings in this chapter have been selected to give the student some help toward an understanding of the economic development that may be traced among peoples that are not far from China. The Philippine Islands furnish us with examples of primitive peoples that represent different stages in economic development.

There is reason to believe that China has within her boundaries primitive peoples that would give the student valuable examples of different economic stages. These peoples have not yet been studied by anthropologists and economists, so that we cannot make use of them. It may be possible to do so in the future.

The chapters of Professor Ely's book, "Outlines of Economics,"\* that deal with the evolution of economic society ought to be read at the same time that these readings are being used. The student is encouraged to read as widely as he can in this field and to keep up his interest in it after he has completed his studies in the classroom. Many of the problems of the modern world cannot be understood without a knowledge of economic history of the past, and many of the problems of the East are being approached as political problems when

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\* The latest edition is the third, The Macmillan Company, New York, 1916.

they are in fact economic problems. The student of economics is encouraged to become a student of economic history throughout his life.

## 7. Primitive and Civilized Peoples of the Philippines\*

*By Hugo H. Miller*

Approximately seven eighths of the population of the Philippines consists of a civilized people known as the Filipinos. [By "Filipinos" Mr. Miller means the civilized Christian Malayan natives of the Philippines.—Ed.] . . . However, the savage and semicivilized tribes, which make up the other eighth, offer excellent examples of various stages of economic advancement from one of the lowest known conditions in which the human race is found, up to the present plane achieved by the Filipinos. It is therefore proper to begin a study of economic conditions in the Philippines with a short discussion of certain typical savage and primitive tribes. Their economic systems and ideas are so simple as to be readily understood, and a study of them prepares the way for a comprehension of more complicated systems and ideas of civilization. Moreover, the trading operations of these tribes with the Filipinos are of considerable commercial importance.

*The Negritos.* The most primitive people of the Philippines are the Negritos. Most of them are found

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\* Hugo H. Miller, "Economic Conditions in the Philippines," Ginn & Co., New York. Reprinted by permission.

in the hills and mountains of several of the larger islands and on a few of the smaller ones. They probably do not exceed 30,000 in number. These people belong to the black race, and have a dark skin, kinky hair, thick lips, and flat nose. They seldom exceed five feet in height and are usually under that measurement. The Negritos live in groups varying from one family to several scores of persons. In most instances their contact with more advanced peoples has changed their original mode of living, but many of them still follow the primitive existence which has been theirs for centuries.

The chief and almost sole aim of the Negritos is food, and their method of obtaining it is such that they keep only a small supply or none at all on hand. They make small plantings of camotes, corn, and squash, but beyond this they usually have no idea of providing for the future needs of their stomachs, feeling that they can find food when necessity demands. The most primitive Negritos depend principally upon the chase as the chief means of securing food, and to a less extent upon fresh water fishing. The men are the hunters. Their implements are bows and arrows, spears, blowguns, traps, nets, and bolos. They are assisted in the hunt by dogs, their only domestic animal. The women sometimes take the place of the dogs and assist in scaring up the quarry. When a deer has been killed a definite division of the carcass is made. The man who first wounded the deer receives the head and breast; the backbone is

given to the man who discharged the fatal shaft; one hind quarter is given to the owner of the dogs that scared up the deer; and the remainder is divided among the other hunters. If a family kills a deer or a boar, "they halt at the spot where the animal has fallen, scoop a hole in the ground, place the animal in it, and then build a fire. Each one takes the piece of the animal that suits his taste best and roasts it at the fire. And so they go on eating until they have filled their bellies, and when thus satiated they sleep. . . . When they awake they go through the same operation, and so on until all the meat is devoured; then they set out upon the hunt again."\*

While the meat thus obtained is the chief food of most Negritos, they also have vegetable food. Much of this is found in the forest in the form of roots. A small amount is obtained through cultivation in "kaingin."† The ground is roughly cleared, and rice, corn, squash, and sweet potatoes are planted. Among the most primitive a few rude shelters are erected near this clearing while the crop matures; but such settlements are not permanent, and when once the food from the kaingin has been consumed they wander off. Indeed it sometimes happens (as in case of a death) that they leave before the crop matures. We have seen that hunting is the province of the men. The men also

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\* Probably no Negritos now exist who do not cultivate crops in kaingin.

† Temporary clearings.

assist in planting, but cultivation is left almost entirely to the women and children. The implements used in agriculture are sharp, pointed sticks, with which holes for the seeds are made in the ground. Bolos are also employed for various purposes.

The clothing of the Negrito is very simple. The most primitive form is made from beaten bark. The men wear a breech-cloth. The women sometimes use this garment, but usually they wear a short skirt.

The Negritos have simple implements to help them in procuring and preparing food. They manufacture pointed sticks for agriculture, and arrows, blowguns, and nets for the chase. They obtain fire with the flint and steel, or by rubbing together two pieces of bamboo, and cook in green bamboo tubes or in pots obtained in trade. Besides food and clothing they have bamboo combs and seed necklaces for ornament, and bamboo musical instruments for enjoyment.

Migrating as they do from place to place, the most primitive Negritos accumulate but few articles. Bows and arrows, blowguns, traps, nets, and dogs they take with them. The meat of wild animals, the wild roots, and the product of their clearings, they must consume where they find or produce them. Permanent results of labor which cannot be easily transported, such as substantial houses, coconut palms, and fruit trees, are of no interest to the Negrito. In addition to providing themselves with the simple forms of food and rough implements and ornaments, many groups of Negritos



have been able to acquire articles of iron or steel (bolos and spears). The cotton cloth which they use is obtained from the lowlanders, in exchange for forest products. The life of the Negrito may be summed up as "one continuous search for food."

*The Subanuns.* The Subanuns are a pagan Malayan tribe of the Zamboanga Peninsula in Mindanao. As with the Negritos, but to a less degree, the chief aim of the Subanuns is food. Unlike the Negritos, however, they ordinarily produce their food rather than find it, and only resort to forest products when their crops fail. The food of the Subanuns is secured chiefly through agriculture. They follow the kaingin system. In the clearings they plant rice, sweet potatoes, corn, millet, yams, tobacco, vegetables, bananas, papayas, and betel vines. The Subanuns are not naturally of a roving disposition, but their implements of agriculture are not such as to enable them to cultivate the same clearings year after year. As soon as the ground hardens and the cogon grass obtains a foothold, their pointed sticks are useless, and they find it easier to abandon their field and clear another. This does not mean that they leave the locality immediately. As long as there is new forest suitable for clearing, they remain. But feeling the ultimate necessity of leaving, they do not plant long-time crops, such as coconut palms, areca palms, and the like (although they greatly enjoy the products of these), nor do they build houses of a substantial character. It is seldom that a Subanun family remains in the same

spot for a period of more than ten years. It is usually much less than that time.

In clearing the ground different families of the community co-operate. In cultivating the clearing the men of the family to which the land belongs make holes with sharpened sticks, and the women and children follow, planting the seeds. Weeding is done twice, but the crops receive little cultivation.

While the Subanuns do but little hunting and fishing, they have a supply of meat in the two domestic animals—the pig and the chicken. They understand the fermentation of rice, and make a rice beer.

The clothing of the Subanuns is made from cotton and abaca\* cloths. The men wear trousers and shirts, the women waists and skirts. Turbans are worn by both sexes. For ornaments, silver trinkets, beads, earrings, necklaces of dried seeds, brass anklets and armlets, wristlets made of shells and silver, rings and earrings of wood, coconut shells, seashells, horn, and brass, as well as bamboo combs are worn, many of these being obtained in trade.

For shelter the Subanuns build houses of one room on wooden supports. The floor is made of split bamboo, palm, or wood, and the rest of the house is bamboo and light materials, such as the leaves of nipa, buri, sago, and other palms. The space beneath the floor is given over to the pigs and chickens. In the house

\* Manila hemp.

are mats of pandan or palm leaves. The bedding consists of a few strips of cotton cloth. There are also baskets for storing food, pottery obtained in trade, brass gongs, and Chinese jars secured by barter from the Moros.

The Subanuns build rice granaries, which consist of large baskets erected on a platform and protected by a roof. In this way they store food to meet the future needs of their stomachs, and thus are not at the mercy of the vagaries of nature.

The Subanuns carry on manufacturing in a rude way. Pottery is made by women. The clay is formed by means of a stone, a stick, and the hand. The pot is first baked in the sun and then in a hot fire. These crude articles are often objects of trade. Coarse and unornamented baskets are made of nito, rattan, bamboo, and wood. The garments worn by Subanuns are made from cloth woven by them. They understand the distaff and the spinning wheel, but the cotton worked upon these is obtained from the Moros, from whom they also buy cotton yarn. The abaca is entirely a home product. Their looms are very crude. The Subanuns also understand working in iron, using as tools bamboo bellows, an anvil (a piece of iron placed on a block of wood), and a hammer. The raw material is obtained in trade, and from it chopping knives and a few weapons are produced. The Subanuns make musical instruments, rings, and combs from bamboo and wood. They also weave mats from palm and pandan leaves.

The civilization of the Subanuns has been greatly affected by barter with the Moros. The latter are much more advanced peoples, and by their trading relations have placed the Subanuns upon a higher plane. The Subanuns barter to the Moros mountain rice, wax, resins, and rattan, in exchange for cotton fiber, yarn, and cloth; weapons; brass boxes, jars, trays, gongs, and ornaments of various kinds; and Chinese jars. The Moro traders arrive in boats, and the Subanuns bring down their products from the hills on their backs, as they have no beasts of burden, vehicles, or boats. Sometimes, however, they use rafts on the river. In these transactions the Subanuns are often badly cheated by the Moros.

The articles with which the Negritos are familiar are quickly listed, but those found among the Subanuns are much greater in number. The articles of daily use among the Subanuns consist of food (rice, sweet potatoes, garden vegetables, wild and domestic meats, fish, etc.), clothing of coarse cotton and abaca cloths, houses, crude baskets, and bolos. The implements used in production consist of pointed sticks, bolos, and knives, and the apparatus for ironwork and for spinning and weaving. The products saved for future use are chickens, pigs, rice stored in granaries, and corn stored in baskets. All these articles may properly be called "necessities," for, directly or indirectly, they all sustain life or shelter the body. The Subanuns also possess articles in no way related to their actual physical.

comfort, but which are kept for ostentation and future needs. Such are the silver, brass, shell, and bamboo ornaments for the body, the brass gongs, and the large Chinese jars. While these in no way protect or sustain the body, yet at any time they can be exchanged for wives, food, clothing, or shelter. In particular are the Chinese jars much esteemed, for these are beautiful and useful, and limited in number.

In the following points the Subanuns have surpassed the Negritos: (1) in obtaining a more permanent residence, which would be absolutely permanent if their rude cultivation could overcome soil hardening and weeds; (2) in securing improved methods of obtaining foods, and an increase in quality and variety; (3) in storing up a supply of food for future wants; (4) in their rude beginnings of pottery, metal work, and weaving; (5) and in their articles of art kept for ostentation and for future needs.

The life of the Subanun may be characterized as one in which agriculture normally gives a sufficient food supply and a surplus. The surplus is stored against future want or exchanged for articles of value.

*The Mountain Peoples.* The Igorots, Bontocs, and Ifugaos belong to the most advanced semicivilized Malayan pagan tribes. They live in the Caraballo Mountains, where the narrow flood plains and the steep hillsides offer but little fertile and arable land. Yet of their various forms of production these people are most advanced in agriculture—a condition which has probably

been brought about by their restricted supply of wild foods. They clear the steep hillsides of pine trees, turn the soil with sharp sticks, and plant sweet potatoes, millet, or beans. Such fields are most often entirely dependent upon the rainfall for moisture and are usually abandoned after a few years' use. These people rely for their rice supply upon land made by building terraces on the steep hillsides and filling these with gravel, sand, clay, and soil. This is usually kept from being washed down the hillside by a thick retaining wall built of stone. Such walls are from 50 centimeters to 10 meters high, and in many communities amount to thousands of linear kilometers. The human labor expended upon these terraces is tremendous. In places whole mountain sides are covered with terraces which contain thousands of hectares, and which are the results of generations of labor.

Several methods of irrigation are employed in these fields. Sometimes canals are fed by springs. Sometimes rivers are diverted into canals by means of dams and weirs, and the water thus comes to the terraces and flows from plot to plot, watering the whole mountain side. This work is done by communal labor and the water is divided among those who build the system. For small patches, where a flow is not obtainable, water is lifted from rivers by sweeps or carried in jars.

The implements of tillage employed by the Igorots and Bontoks are sharpened sticks, while the Ifugaos use crude wooden spades. These are quite effective in-

ground soaked and softened with water, and the soil is thoroughly broken up. It is then puddled with the feet. These people also understand the use of fertilizers, and add pig manure, ashes, grass, and sweet-potato vines to prevent impoverishment of the soil. Every two years they add new soil. The grain is sown thickly in a small seed bed and is transplanted in the terraces after it has sprouted. The cultivation of the fields is very carefully done. Women and children pull the weeds and thin out the plants. Old women and children protect the crops during the day, and at night fires are built to scare away wild hogs. The Bontoks and Igorots make scarecrows, consisting of bunches of leaves, figures of large birds, and the like. These are hung on poles and are often kept in motion by systems of strings attached to a float in a rapidly moving current.

In the rice harvest four or five cutters reap the grain and place it in bundles which one woman binds and carries to the transportation baskets.

Crop rotation is practised, but not for the purpose of increasing fertility or retarding soil exhaustion; it is rather to make constant use of the land. The best example of crop rotation is the planting of sweet potatoes in the terraces after the rice has been harvested.

The system of agriculture as a whole is excellent, and such that the mountain people wrest from their barren hillsides a supply of food which is more than sufficient for their immediate needs. In all the villages there are granaries, built of heavy pine planks and

timbers, with thatched roofs extending almost to the ground. Here the rice is stored. Corn and millet are kept in the dwellings. Beans are dried and stored in baskets. The Igorots also slice, dry and store sweet potatoes.

These people are fairly well supplied with domestic animals. Horses of good breed are raised and used for riding and packing. Carabaos [water buffaloes—Ed.] and cattle are also raised, but are used neither in agriculture nor in transportation. Their flesh, however, is much appreciated. Hogs are kept in pens and are fed regularly three times a day with sweet-potato vines, parings, and green vegetable matter, always cooked. The refuse of the pen is the chief fertilizer. Besides these animals, chickens and dogs are raised about the house. The sources of food eaten by the Ifugaos have been calculated by Roy F. Barton as follows:

<i>Food Source</i>	<i>Part of Total Subsistence</i>
Agriculture . . . . .	.84
Primitive food getting . . . . .	.094
Animal culture . . . . .	.042
Importation . . . . .	.024
	<hr/>
<i>Total . . . . .</i>	<i>1.000</i>

The clothing of the men consists of a girdle of bast, rattan, or brass links. This supports a breech cloth made of bark or of cotton cloth spun by the women or obtained in trade with the Ilocanos. To this is some-



times added a light blanket worn when it is cold, as in the late afternoon or early morning. The Bontoks wear a small hat of basketwork, which is used more as a pocket than as a protection for the head. The Igorots wear a headband for the same purpose. The women wear a skirt, a girdle, and a waist, usually of cotton. Blankets are used by the women as well as by the men.

The agriculture of the mountain peoples is such that there is no necessity for changing residence from time to time. Their houses are therefore much more comfortably and permanently constructed than those of the Subanuns. These are of two types—one built high above the ground upon large pine timbers, the other resting on the earth. The sides are of overlapping pine boards or of mud and stone. The steep-sloped roof is built of grass.

The manufactures of the mountain peoples are quite numerous. Stone is made into hammers, and also into troughs and bowls for pigs. All the men know how to make the crude agricultural implements. Wooden pails for the food of pigs, wooden dishes, bowls, dippers, and spoons for the household, and wooden shields and spears are also fashioned. Smoking pipes are also carved from wood. This work is done laboriously with knives and fire, and the articles are frequently ornamented with human or animal forms. The making of articles from metal, however, is confined to a few persons, for the reason that metal work requires considerable skill and experience. In the smithies two or three men work

together. One operates the bellows, another feeds the fire and does the heavy striking during the initial part of the work, and the third, the real blade-maker, directs all the labor and performs the finer parts of the blade production. The iron used is scrap, obtained from the lowlands. The metal is hammered with a large stone hammer on a stone anvil and is tempered in water. In these smithies are produced several styles of spear blades, battle axes, and bolos. Nearly all Igorot towns make the clay and wooden pipes locally used for smoking tobacco. A few men, however, gain a living by traveling from one town to another making pipes of brass. These men fashion a model of the pipe bowl in beeswax imbedded in a jacket of clay. When the clay is baked, the wax melts and is drawn off, leaving a clay mold. Into this the molten brass is poured. Brass pipes are usually fitted with a stem of similar metal. Where suitable clay is found, pottery making is also carried on, and, as with the Subanuns, this work is left entirely to the women. The bowls, formed with the hand and a stick, are sunbaked, then fired, and afterwards glazed with resin. Baskets, on the other hand, are made by the men. These are produced in numerous forms—some for storing food, some as winnowing trays, others as rice containers. One of the most important kinds of baskets is that used by the men for transportation.

A small amount of sugar-cane is grown. This is crushed in crude mills, and the juice is crystallized in large iron boilers. It is also often fermented in tightly

covered jars. The drink thus made is known as "basi." "Tapui," or "bubud," a rice beer, is also extensively made and drunk. Several salt springs occur in this mountain section. The salt from the water is allowed to accumulate on stones, and is then washed off and the resulting brine evaporated.

Whetstones, flint, and clay for pottery are obtained by the Igorots, and to a small extent copper and gold are mined by them. From the forests they cut lumber for their houses, the logs being reduced to boards by means of axes.

It is interesting to note that in the raising of crops and the transformation of materials the work is divided. The older children gather food for the pigs and guard the rice terraces. The men cut the wood and lumber, build houses and dikes, construct irrigation dams, and transport the harvested rice. They manufacture and sell basi and produce implements and utensils for the house. They weave baskets and work with stone and metals. The women are the spinners and weavers (for some cloth is spun by these people). They also prepare the seed beds and set out the rice plants in the terraces. They plant, cultivate, and harvest sweet potatoes, millet, corn, and beans, and assist the men in transporting soil. Some are makers of pottery and of salt. Both men and women thrash rice, carry water, and make the rice drink. The old people do the light work. They are the counselors; they guard the crops, attend the children, carry water, and do the cooking.

## DIVISION OF LABOR BETWEEN SEXES IN IFUGAO

<i>Men</i>	<i>Women</i>	<i>Both</i>
Spading fields	Planting rice	Cooking
Getting wood	Tending rice	Harvesting
All work in wood	Weaving	Care of baby
Pot burning	Pot molding	Carrying rice to
Blacksmithing	Gardening	granary
Rice field construction		Camote culture
Basket making		

Often a larger number of persons than is included in the family is needed to do a piece of work. In housebuilding and in much of the agricultural work, as in the building of new irrigation works, several families group their labor. The mountain peoples do not employ animals in tilling the soil, neither do they often employ them in transportation. Goods are carried on the backs of men and women.

Some of the articles manufactured by the mountain peoples are not produced in all communities. Thus, in Bontok, pottery is made by women of Samoki; salt comes from Mainit; battle-axes and spears from Baliwang and Balbalasan; clay smoking pipes are made in Agawa; whetstones are the product of Basao. These articles are disposed of by men from the producing towns, who, traveling in groups, take their wares on their backs to other towns for trade. The system is one of barter; that is, the men exchange their products for others obtainable in the different localities. Yet in all

these transactions there seems to be a growing preference for the use of certain objects as a medium of trade. Particularly is this true of "manojos" (bundles capable of being grasped in the hand) of rice in head. The Igorots often pay for articles with these bundles. If they barter one article for another, they often estimate the values of these in terms of manojos of rice. To a less extent pottery, tobacco, and salt are used in exchange. More and more also the Igorots are employing silver and copper coins and even paper bills, but these are the result of a civilization higher than theirs.

In comparing the Subanuns with the mountain peoples, as we shall below, we readily see points in which the latter have surpassed the former, and other points in which the two are on the same plane.

1. Though the implements of agriculture which the Igorots and Bontoks employ are the same as those of the Subanuns, the former have, through irrigation, succeeded in preventing the hardening of the soil and in keeping out weeds. By the use of fertilizers they have prevented exhaustion of the soil. Thus, being able to use the same piece of land constantly, they have achieved permanency of residence.

2. The mountain peoples have greater variety of food than the Subanuns.

3. They also have as great a store of food as the Subanuns and are consequently as far removed from danger of starvation.

4. In weaving and pottery they are no farther advanced than the Subanuns, but in woodwork and metal work they have surpassed them. In metal work they have gained division of labor, in that various operations in the process of making articles of metal are carried on by different workmen.

5. The number of products used by the mountain peoples for ostentation are at least as numerous as those of the Subanuns, and many, such as the carved bowls and smoking pipes, are of local origin and design.

6. The Subanuns have but the beginnings of commerce, for their trade consists only of that with a higher race. The Igorots, Bontoks, and Ifugaos, on the contrary, have developed a system of exchange among themselves which is more important than the commerce carried on with outsiders. This exchange results from a diversity of production in the different communities.

7. Finally, they have acquired a very definite idea of the value of their products. They are not cheated, as are the more simple Subanuns.

The life of the mountain peoples may be briefly described as one in which an excellent, though still primitive, system of agriculture provides an abundance of food and a surplus against the exigencies of a poor crop, and allows permanent residence and the utilization of the labor of a few men in the manufacture of useful articles and luxuries.

*General Comparison.* Buecher, in his "Industrial Evolution," has aptly stated that human needs are

capable of an infinite multiplication and subdivision; they are never at rest; they increase in degree and extent with the progress of civilization. Thus we have seen that the needs of the Negrito are little more than food, and of that barely enough to keep life in the body. After a people obtain a food supply above actual immediate needs, their wants become more diversified; they begin to improve their methods of production, increase the variety of their diet, better their shelter and clothing, and develop taste for the artistic and for display. In short, their wealth increases not only in amount but in kind.

Not only does man come to possess a greater amount and variety of wealth as he becomes more civilized, but he is less and less dependent upon nature and more and more dependent upon his fellow men. The lowest form of human being that can be imagined is one whose only activity is the procuring of food, and who wanders about alone, living on worms, slugs, roots, twigs, and such nourishment as he can obtain without the assistance of implement or tool of any kind. Such a human being is not known to exist. All men so far encountered live in groups, understand fire, and possess certain implements which assist them in obtaining their living. Search for the necessities of life and the desire to obtain them with the least effort possible have caused such groups to evolve systems by which these necessities (wealth) are produced, exchanged, distributed, and consumed. The more complicated the system, the

greater the wealth, and the greater the surplus over the bare necessities of existence.

Greater complication of the economic system with advance in civilization is well illustrated in the tribes under discussion.

Of the most lowly of known human beings the Negritos are a good example, and even among these people we see the beginnings of a system; there is a division of labor between the sexes by which, in general, the men do the hunting, and the women the gathering or growing of vegetable foods. There is also some idea of the division of wealth among them, as shown in the distribution of the carcass of an animal killed in the chase.

The Negrito is in the *stage of primitive group economy*, in which production is solely for the group's needs, and in which goods are consumed where they are produced. On the other hand, the Subanun is on the verge of, and the Bontok, Igorot, and Ifugao are just entering, *the stage of primitive town economy*, the stage of direct exchange, when goods pass directly from the producer to the consumer. The Subanuns are much more independent of nature than are the Negritos, since they have a surplus supply of food. The mountain peoples are still more independent on account of their irrigation system and their use of fertilizers. But their system of producing wealth, exchanging and distributing it, is, as a result, more complicated. There is greater division of labor between the sexes; artisans such as the



blacksmiths and pipemakers have emerged to spend their entire time in the making of one kind of article.

Thus we see an advance from a system in which each individual obtains his own food to one in which certain persons do not produce food but are dependent upon others for their sustenance. They transform raw materials into finished objects and exchange them for food, clothing, and other things that they need. We also see an advance from a stage in which men wander from place to place to one in which they form towns. A more advanced stage is that in which each town produces certain articles. Such a division in the production of articles brings into existence the idea of exchange, first between individuals and then between localities (towns). This exchange in turn calls for men to take the goods from the producer to the consumer. From these men arises the need of a standard commodity which is always acceptable in exchange for products, and by which relative values of articles may be measured. This is money. Among the mountain peoples we have seen that bundles of rice are most often used as money. As civilization spreads we also note changes in the distribution of wealth. Among the most primitive peoples there is little difference in the amount of wealth possessed by individuals. This condition results from the simplicity of the method by which wealth is obtained and the small amount which exists. Among the mountain peoples, however, there are men who possess a large share of the surplus productive

wealth of the community, such as rice terraces, pigs, and carabaos. Other men who have none of these must work for the owners, or must starve or revert to more primitive conditions of living. Hence these workers are economically dependent to a large degree upon the possessors of productive wealth.

*The Filipinos.* Among the semi-civilized peoples of the Philippines the mountain peoples have made the greatest economic advance. From them we may pass to the Filipinos.

The system by which their wealth is produced, exchanged, distributed, and consumed places the Filipinos within the stage of *national economy*—the stage of wholesale production and of the circulation of goods, at which products must ordinarily pass through many hands before they reach the consumer. This stage is not so easily comprehended as those of savage and semi-civilized tribes. It is not grasped in an idea nor explained in a few words. Many economic laws, ideas, and customs not found among the primitive peoples govern the actions of men in this stage of civilization.

## 8. The Economic Transformation of Rural India \*

*By Radhakamal Mukerjee*

India is now in the throes of a great economic revolution. A contrast between city life and village life

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\* From Radhakamal Mukerjee, "The Foundations of Indian Economics," London, 1916. Reprinted by permission.

would show the fundamental character of this revolution. Rural India carries on the production, distribution, and consumption of wealth in a manner which is strikingly different from that of city India. The structure of rural society has hitherto rested, and is still resting to a certain extent, on status, while the cities are rapidly coming under the sway of competition. Indeed, the economic ideas of the city are not only far removed, but in some cases are actually antagonistic to those of the village. The village is still almost self-sufficing, and is in itself an economic unit. The village agriculturalist grows all the food necessary for the inhabitants of the village. The smith makes the plowshares for the cultivator, and the few iron utensils required for the household. He supplies these to the people, but does not get money in return. He is recompensed by mutual services from his fellow villagers. The potter supplies him with pots, the weaver with cloth, and the oilman with oil. From the cultivator each of these artisans receives his traditional share of grain. Thus almost all the economic transactions are carried on without the use of money. To the villagers money is only a store of value, not a medium of exchange. When they happen to be rich in money, they hoard it either in coins or make ornaments made of gold and silver.

The village agriculturalist possesses little capital. He lives from hand to mouth. The Banya supplies the cultivator with seeds, and charges an enormous interest. But the cultivator pays the interest ungrudgingly;

though he stoops under the heavy burden he does not improve his position. There is no desire for a better, more comfortable living, both among the cultivators as well as among the artisans. The artisans follow their hereditary occupations. There is no competition, no stimulus for improvement, no change in customary wages. The industries are stereotyped; the apprentice only tries to imitate his master, and rarely thinks of introducing new implements or new methods of manufacture. Thus the village communities are the most complete and the most contented in the world. Within their self-sufficing confines trade is no vulgar source of profit for which men scheme and strive, but a calling, often a holy calling, handed down from father to son through generations, each with its own unchanging ideals, its zealously guarded crafts.

But the village life is being transformed. The city sends to the village Manchester cloths, and these are replacing the cloths woven by its weavers. Not only weavers, but also others artisans are losing their occupations and turning to agriculture. The cheap kerosene oil from Baku or New York threatens the oilman's existence. Brass and copper which have been used for vessels from time immemorial are threatened by cheap enamelled ironware imported from Europe. The village sugar-cane is also in danger on account of the competition of imported sugar, which is sold at a very low price. The manufacture of sugar from *gur* (molasses) tends to become unremunerative. The demand for *gur* also falls

off when the price of sugar is brought down by competition. There is also, *pari passu*, a transformation of the tastes of the consumers. They abandon *gur* for crystal sugar. Home-woven cloths are now replaced by manufactured cloths for being too coarse. All local industries are attacked, and many have been destroyed. Villages that for centuries followed customary practices are brought into contact with the world's markets all on a sudden. For steamships and railways which have established the connection have been built in so short an interval as hardly to allow breathing time to the village which slumbered so long under the dominion of custom. Thus the sudden introduction of competition into an economic unit which had from time immemorial followed custom, has wrought a mighty change.

New economic ideas have now begun to influence the minds of the villagers. In some of the villages the weavers and the blacksmiths have no doubt been compelled to leave their occupations on account of foreign competition, but more men are leaving their hereditary occupations *of their own accord*. All Brahmins are not priests now. Many, indeed, live according to the old ideals, and view the temptations and vices of the West in "silent, deep disdain." But a few of them who have felt the impulse of a new life have gone to the cities. Those who are intelligent become lawyers or government servants, and those who fail in the competition become petty clerks in railway or mercantile offices. The middle classes also leave their villages and get scattered all over

the country to earn a living. . . . Not only the middle class but the field laborers also have found their ancestral occupations not sufficiently paying and have felt the need of moving to other places. The Government public works, the factories, the tea, indigo, and coffee plantations, the mining operations, as well as the facilities for foreign emigration, all tend to shake the old immobility of labor. As the *Imperial Gazetteer* writes, "A comparison of census returns of 1891 and 1901 shows that a considerable landless class is developing which involves economic danger, because the increase has been most marked in districts where the rural population is already congested or in provinces in which there is a special liability to periodic famines. The ordinary agricultural laborers are employed on the land only during the busy seasons of the year and in slack times a few are attracted to large trade centers for temporary work." The attraction to towns and other trade-centers increases as trade industries develop, and this movement is accelerated in famine years. "Agricultural laborers migrate from Bengal and the Central Provinces to Assam, from the United Provinces to Bengal, from Madras and Chittagong to Burmah; and outside India to Ceylon, Mauritius, South Africa, British Guiana, and other colonies in search of agricultural and other employment." In Madras, where emigration has been comparatively easy, there is almost a chronic scarcity of labor. In some districts the agricultural operations have been much impeded and at times endangered by the

constant and sudden desertion of agricultural laborers, who, after entering into contract to cultivate the lands on certain conditions, emigrate to foreign parts without the slightest notice to their employers.

There are also other great far-reaching effects of this migration of labor. There has been engendered an aversion from the parent plow and the workshop. The demand for labor, again, has withdrawn the most valuable and potential elements from society—the flower of the agricultural population and rural artisans—so that not only agriculture but the handicrafts also suffer. The production of cereals has diminished a great deal while the foreign exports have a continuous tendency to increase. The village market is no longer isolated; the demand for food in any part of India tends also to affect it. The population has increased and the standard of living has also become higher. The coolie emigrants or the middle class who return to the villages bring with them good savings and live on better fare than they were content with before they emigrated. The increased demand for food is, however, unaccompanied by an increased out-turn of agricultural produce. The price of food-stuffs has consequently risen by 32 per cent. The exodus to town is still going on at an alarming rate, the towns still continue to offer easy employment to the middle classes and laborers and ready markets for the products of the village artisans. They offer high material prospects to the ambitious, and in general provide all the mechanical facilities and pleasures of life

to satisfy those whose standard of life has suddenly been raised. The landlords pass their lives amid the luxuries of the towns, and lose touch with their tenants. The sturdy cultivators become domestic servants, and the middle-class independent *bhadralokes* become clerks in mercantile offices and Government establishments. Thus the villages are all deserted and left as wastes and become prey to malaria. Paternal estates, tanks and orchards which have been handed down from generation to generation are left to decay. The cattle gradually deteriorate in quality. Milk and dairy produce become gradually scarce, and pisciculture and horticulture become unknown. The movement of the population from the village to the city is in fact not only working a complete revolution in the habits and ideals of our people, but its economic consequences are far more serious than is ordinarily supposed. It has made our middle class helplessly subservient to employment and service, and has also killed the independence of our peasant proprietor. It has jeopardized our food supply, and is fraught with the gravest peril not only to our handicrafts but also to our national industry, agriculture.

Another important change brought about in our rural industrial life is the introduction of money economy. This has been a slow process, and brought about by various causes. The railways have destroyed the economic self-sufficiency of the village. They have created wants which were unknown before. The commodities which are thus introduced into the social



economy of the village cannot be made by village artisans. Thus there grows a class of middle-men and intermediaries. At first they are peripatetic, like the Kabulis and Marwaris, who come from up-country. They will sell the commodities only for money in cash, for they cannot stay in the village waiting for a quantity of grain at harvest time. Thus these itinerant dealers who come to the village occasionally with their assortment of imported goods encourage the system of money economy. There are also other causes of the introduction of money. The villagers who go to the cities and other trade centers for service and employment are paid not in kind but in money.\* When they return to the village, they come with ready money in their hands. Again, the steady and continued rise in prices of the necessities of life, which has been a characteristic feature of the recent economic history of the country, has put the cultivating classes in possession of an amount of ready money which they never possessed before. In those tracts of the country especially where raw materials for export, such as jute, cotton, oil-seeds, are grown, the agents of the European exporting firms offer cash advances to the peasants, and make them more or less independent of the village money-lenders, who lend seeds and recover their advances in kind, and who are thus instrumental in conserving barter-economy. The

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\*The text reads "are paid in kind and not in money" which is obviously a mistake such as might be made inadvertently. It has been changed to agree with the sense of the passage.—Ed.

substitution of the *gumustha* or clerk of the exporting firm for the village *mahajan*, indeed, marks a stage in the transition from barter-economy to money-economy. With these economic causes is combined an administrative necessity. The system of collecting the revenue in cash is perhaps the most powerful cause of the substitution of money for barter in Indian villages.

## 9. The Industrial Transformation of China\*

*By Dakin K. Lieu*

"We have enough to do with our foreign debt problem, our currency, taxation, and budgetary problems; we do not want to trouble ourselves any more with the question of industrial development. Let the business men look after that themselves, but let us devote our attention to those questions which more closely concern with our national economic policy." Such is, in general, the attitude of most publicists and students of economic science. The latter will not divert their attention to the industrial problem, while the former have little opinion on it, which, to them, is not at all worth while to be made known. The industrial problem does not to them seem to have a close bearing upon our national economic policy; it may even form no national problem at all. Why should we, then, according to them, waste our time in discussing it, and be finally disappointed with our fruitless efforts?

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\* From *The Chinese Social and Political Science Review*, Vol. 1, No. 4, Peking, 1916. Reprinted by permission.

The above attitude is to a great extent responsible for the lack of any well-organized movement for industrial development, and the consequent tardy progress, if progress there is, that has been made during the past few decades in modernizing China in that direction. For, ever since the fifties, the nation has become familiar with the term "industrial development"; to some it means the building of railways and the opening up of mines under foreign administration; to others, the establishment of a few factories in treaty ports and commercial centers. But the actual accomplishments hardly even amount to this. The fault, however, does not wholly lie with those who take charge of the work, but the nation at large deserves blame for not giving it active support. The industrial problem has become a popular subject for empty talk, but has never received due attention of the general public in a serious manner. A nation-wide movement is necessary to solve the problem. It is the duty of the publicists and students of economic science to call the people's attention, and stir up their interest in the matter, so that a movement may be started, and, when that is done, to give it rational direction and control.

There should be a national movement for solving the industrial problems, for many reasons. In the first place, the problem concerns the people's mode of living, which includes both the materialistic and idealistic aspects of life. Unlike the fairies of ancient Greek, Scotch, or Chinese mythology, the people must have

food, clothing, and shelter, and these cannot be had by other than industrial processes. The industrial problem, then, is a national food problem, plus the problems of clothing and shelter. This statement is a sufficient argument for the practical Occidental mind. However, for the over-idealized Chinese, a second argument is better added. It has been said by Kuan-tzu that the people will begin to observe ethical principles when their barns are full. That means that the masses must be fed before they can be taught, and the beautiful superstructure of civilization can only be built upon a solid foundation of bread and butter. On the other hand, if a people had to tax all its vital energy in order to maintain a bare subsistence, it could not possibly attain any high plane of development. Moreover, it would be the most productive of bandits, pirates, robbers, criminals, paupers, and all kinds of social degenerates,—a shame and a burden to the nation as well as to mankind in general.

A second reason lies in the effect of the industrial conditions of a nation on the nation's ability of maintaining its existence and independence in the great international economic struggle. It may exist by maintaining, in its own territories, all kinds of industries necessary to the satisfaction of its economic wants, or by specializing in some one kind in particular, and securing the products of the rest by exchange with other nations. In other words, it may exist either in a self-sufficient state, or in a state of international economic

interdependence. That nation which, though specializing in but one kind of industry, has, nevertheless, the moral power of compelling other nations to supply its deficiency, because they cannot supply their own needs without its products, enjoys, under ordinary peaceful conditions, as real an economic independence as a self-sufficient state. On the other hand, a nation cannot long maintain its independence, or even existence, if it can neither produce, nor secure by exchange, all that it needs, but constantly owes a balance of trade to other nations; or if it depends entirely on the surplus capital of other nations for the development of its industries; or if it also depends, mainly if not wholly, upon such capital for running its government. Our people have now turned their attention to public expenditure as a cause of our indebtedness to foreign countries, but they have not yet seen the significance of this other kind of debt,—the debt in trade. The industrial problem, therefore, is a problem of public debt, of national economic independence, as well as a question of culture and national ideals. It is at once broader and more pressing than it at first seems to be.

We have now seen the significance of the industrial problem, and we also agree, most of us, that our industries are undeveloped. But how much undeveloped we cannot say. We say they are in a backward stage; but what exactly is the nature of the stage, and how far back is it from the general degree of progress? We want our industries to compete with those of other

countries; and encouraging the purchase of native goods, together with improvement in their manufacturing, has lately become a fashionable policy; but are such methods adequate for the accomplishment of our ends? There are some questions which we must answer definitely before we can see, with sufficient clearness, the nature of the required solution. We would be satisfied with minor changes and slow developments which need not affect the whole industrial system, if that were all that we need. As a matter of fact, the backwardness of the industrial system is too far, and the step to be taken in order to reach the modern stage of industrial development is too great, for us to be contented with anything but fundamental changes. We are about a hundred and fifty years behind the pioneer industrial nations of Europe in industrial practices, and more than two hundred years in formative ideas. For five or seven generations they have been advancing, while we have stayed behind. And now there is a great gulf separating them from us. They have attained the stage of national economy while we are still in the stage of town economy. The unit of their economic community is the nation; that of ours, the town. For a thousand separate towns to compete with consolidated nations, necessarily means that we always get the worst end. Our economic system has existed without any fundamental change since the Chin and Han dynasties, when the Chin-tien\* or

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\*井田.

common land system (corresponding to the manorial system of Europe) was broken, until the present time. And now, as a result of the reforms of the last few decades, we have covered over the old economic system with a superficial layer of the modern industrial regime, hardly broad enough to extend over the whole country, with a mere sprinkling of quasi-modern factories here and there in this extensive land of undeveloped natural resources. A supreme effort, a national movement supported by all classes of people co-operating in a common cause, is necessary to bring our country beyond the great separating gulf, and transfer her industrial regime to the stage in which the European and American nations now are.

The term "stage of national economy" is adopted from the German economist Karl Buecher, who divides European history, from the point of view of industrial evolution, into three stages and five periods. A study of his analysis will throw light upon our own problem.

(The three stages and five periods of Karl Buecher arranged to show their correspondence.)

I. Stage of Home Economy.

1. Period of Domestic Work.
2. Period of Wamework or Custom Work.

II. Stage of Town Economy.

3. Period of Handicraft or Price Work.
4. Period of Commission Work or House Industry.

III. Stage of National Economy.

5. Period of Factory Work.

By domestic work is meant production mainly for home consumption, as was the case with manorial farmers carrying on weaving in the house. Home cooking is a survival of the system at the present time. Wagework is custom-work, where the individual customers furnish their own materials to be worked upon by the artisans. Village blacksmiths are examples. After the medieval towns came into existence, a great transformation took place, and manufacturing began to be carried on under a system of handicraft or price work. Numerous small master workmen manufactured products to be sold at a price, they being at the same time head workmen and entrepreneurs. It may be custom work, or it may not be. That was the economic regime that existed in Europe prior to the Industrial Revolution. A second transitional stage was passed through when the small masters lost their independence and worked for certain "houses" or mercantile establishments on commission, production being still carried on in their individual shops. The last system, namely, that of factory work, is too plain to need elucidation. Its presence is a *sine qua non* of the existence of a system of National Economy.

It is to be observed that "a System of National Economy" as used by Buecher, is somehow different in meaning from the same term as used by Frederick List, another great German economist and founder of the National School of Political Economy. List speaks of national economy in contradistinction to cosmopolitan



or universal economy, as taught by the Classical School. His system implies a self-sufficiency in the nation, at least with regard to the most important articles of consumption. On the other hand, Buecher's system does not necessarily involve national self-sufficiency, but it does mean the breaking up of the self-sufficiency of towns. The towns become interdependent, because the economic unit is now the nation. Different parts of the nation specialize in different kinds of products, each part utilising the most suitable natural resources and the best fitted human talents (including common laborers as well as really talented men) for that purpose, and each having the capacity of supplying the whole nation with the kind of products it yields. Usually it does more than this. It even exports its products to other countries to exchange for commodities which the nation lacks. Between these different parts, there is also constant trading, and prices tend to be uniform all over the country except for the small differences due to reasonable transportation charges. Capital and labor move readily from place to place, and there is no great superfluity of them in one locality with an equally great scarcity in another. Similarly with all kinds of goods in daily use. This means that transportation is rapid and banking facilities complete. It also means the conquering of natural and artificial barriers;—natural, as rivers and mountains, artificial, as internal tariff and local currency. Above all, however, it means that business has become national in scope; not only in its

trading, but also in its administration. Business is no longer restricted to a single locality, a single town, but extends over many localities widely scattered over the whole country. The organization of a large modern corporation is comparable only to that of a national government, comprising many territorial divisions, some of which are even located in foreign countries, like colonies in political organizations. This is even more important than the factory system, because it is business organization that brings together capital and labor, two main factors of production, as well as the producer and the consumer.

With this factor in view, we trace the history of economic development and find the following way of characterizing the three different stages:

- I. State of Home Economy.  
No business organization.
- II. State of Town Economy.  
Partnership and Proprietorship.
- III. State of National Economy.  
Corporation.

Having defined the state of National Economy, we shall now survey the industrial conditions of our country, and see whether we are in that stage or not. We shall first have recourse to statistics. Of all the manufacturing establishments included in the statistics of the Ministry of Agriculture and Commerce for 1913 (the Second Year of the Republic), published in June, 1915, but not on

same until this year, only 247 used power, and only 904 had each more than one hundred employees in their establishments. The exact number were given in another table.

<i>No. of employees</i>					<i>No. of establishments</i>
7 to 30	..	..	..	..	..18,830
30 to 50	..	..	..	..	.. 1,145
50 to 100	.	..	..	..	.. 833
100 to 500	..	..	..	..	.. 726
500 to 1000	..	..	..	..	.. 145
1000 up	..	..	..	..	.. 33

21,712

It is very noticeable that the number of establishments declines very abruptly as we pass from the first to the second class, and that factories with less than 30 employees make up nearly 87½% of the total number. Again, in the corporation statistics of the same publication, we find only 261 corporations of the modern type organized for manufacturing purposes, with an aggregate capital of \$39,244,905.

Even should the other kindsof joint stock companies and partnerships be included in the figure, the total did not exceed 565, with a total capitalization of \$49,875,160, a great part of which, no doubt, was not paid up.

The total number of modern corporations, including manufacturing as well as agricultural, commercial, and transportation companies, was 415, and the total capital,

\$63,833,323. From these we may safely conclude that modern factories run by modern corporations did not exceed 300 in 1913, and there has probably been little increase since. Between 1912 and 1913, for instance, there was an actual decrease. The statistics may not be strictly accurate, but if any is left out, it must be the small workshops and small proprietorships, rather than the big modern factories and modern corporations. Greater accuracy would further reduce the ratio between the latter and the former. Such small numbers for a country like China are certainly insignificant. The bulk of production must still be carried on under the old handicraft system. That system, then, is the industrial regime of China, and the corresponding stage, that of town economy, is the stage of our economic development.

Next, let us picture to ourselves the industrial conditions in our towns. When we walk to the right and left through the business streets of Shanghai, Hankow, Tientsin, or Peking itself, we see workshops and commercial stores standing side by side, of nearly the same size, and with nearly the same appearance. Their premises occupy a frontage of ten to fifteen feet; some have two stories, but seldom more. (We do not include those very rare cases where the buildings are of Western type, as may be seen on Nanking Road at Shanghai). The stores and shops are not only mixed up on the same street, but in many cases it is actually impossible to distinguish between the one and the other.

Nor will the distinction be made to advantage, for all these small workshops, the most prevalent kind of manufacturing establishments in our country, carry on sales at the place where their goods are manufactured, and frequently both manufacturing and trading are conducted in the same front room." Moreover, many of these "manufacturers" depend mainly, if not wholly, upon make-to-order business, or even upon commission work, where the customers furnish their own materials. Even when they do carry on open sales, the products do not as a rule go out of the town, and seldom beyond the neighboring streets. They go out of the town only when some merchants happen to know that similar products are sold at a much higher price elsewhere, and order limited quantities of them from the manufacturers. These orders are usually executed by "wholesale" producers, that is, manufacturers who do not retail to the consumers directly, as those we have just described, but sell in a more regular way, namely, through some middlemen or traders. These manufacturers do not open their shops on business streets, but occupy ordinary dwelling houses in the sections of the city which we may consider as residential quarters. In both cases,—the cases of the "retail" and "wholesale" manufacturers,—the "factories" also constitute the residences of the proprietor and master-workman, housing his whole family as well as the journeymen and the apprentices. Therefore, strictly speaking, there is no differentiation between business premises and dwelling houses, between

manufacturing establishments and commercial firms, or between retail, wholesale, and residential sections in a Chinese town.

So far as concerns the place of production. Now, if we step into one of these workshops, we find another characteristic which is strongly opposed to industrial development. Productivity can never be much increased when there is no differentiation between the various forms of productive functions, as we have already described in the last paragraph, nor can it be increased when the tools are crude and inefficient. In almost all of our workshops, the tools and the processes have remained the same that they were a few hundred years ago. They involve a good deal of manual labor, much of which is wasted; the results are insignificant compared with the amount of labor spent upon them; and they do not strictly conform to required standards. Accuracy in workmanship is not a quality that we can boast of. In many cases, much improvement can be effected by a little change in the instruments used. For instance, the modern hand drill is a much more efficient instrument than the Chinese tool, though just as simple. And yet the poor workmen never think of that, and even when they can buy these better tools, they are slow in making use of them. Similar conditions exist in the country and in the outskirts of towns, where most of our staple products are produced. The salt industry in Lianghuai\* (northern part of Kiangsu), the tea industry

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\*兩淮.

in Anhui, the cocoon industry around Wusih\* and Huchow† (Wusih in Kiangsu and Huchow in Chekiang), the timber industry in the northwestern provinces as well as in Manchuria, and lastly, the rice industry along the Yangtze River—all these support multitudes of families, and supply the wants of millions more. Yet their tools and processes are equally primitive, although very slight improvements upon them will often increase the productivity beyond calculation. The tea leaves are picked by hand; dried, sorted, and flavored in crude vessels; and packed up for sale and for transportation in clumsy baskets. Salt is obtained either by boiling brine water or by its evaporation in sunshine. In the first case, very thick-bottomed iron pans are used, and they are placed over fuel which produces a great deal of smoke, whereby the salt crystals are colored and become impure. In the case of evaporation, the pools are lined with wooden boards and a kind of yellow sand-clay, and grass and ashes are freely mixed with the solution to facilitate the process of crystallization. In the timber industry, the axes used for felling the trees are often dull, and not well adapted to their particular needs, for hard and soft wood, trunks and branches, are cut with nearly the same kind of axes. The logs are hauled by human labor, with the aid of a few simple and crude capstans and pulley wheels. Rice is planted, manured, and reaped by hand. That may be necessary because

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\* 無錫.

† 湖州.

of our peculiar mode of intensive cultivation. But thrashing and milling can certainly be done by a better method. A tread-mill would do the work much faster than a turning-mill, while the Chinese still use the ox as a prime mover. Such, in fact, is the conservatism of our industrial world that improvements are seldom adopted by imitation, much less by invention, which shows that a far-reaching movement, under the leadership of men of superior knowledge, is necessary to the development of our industries. The second characteristic, then, is the inefficiency of tools and processes, and the obstinate clinging to them on the part of the ignorant industrial producers.

A third characteristic is to be found in the business relations of our industrial producers. In the silk industry, for instance, the cocoons are raised by individual families that live in villages around Wusih and Huchow, are bought by dealers who come all the way from Shanghai and Huchow, with cash, which they must bring along with them in boats, and not in railway trains; and finally these cocoons are sold to the numerous small silk factories, each of which deals with a particular dealer or group of dealers known as *pang*. If the silk market at Shanghai, where 75% of the silk factories of the country are located (factories that produce silk yarns, and not silk fabrics, for these are made in the individual families or *hu\**), is not active, then the



producers at Wusih suffer a great deal of loss through depression of price, and they cannot relieve themselves by sending their products to other places, because they do not know where to send, and cannot afford to advance the transportation expenses and wait for the returns from sales some months later. In 1913, there were 142,005 families in the township of Wusih which raised 49,537,195 catties of cocoons, averaging about 350 catties per family. The total value was \$20,201,681, or about 40 cents per catty.\* It is therefore not to be expected that a small family, which produces but \$140 of cocoons a year, will take the initiative to market its products at some unknown locality, where they may not be sold at all. These producers are therefore entirely at the mercy of the dealers; the dealers in turn are at the mercy of the factories, which are, again, controlled by the market conditions, implying to some extent the conditions of foreign demand. Similarly, in the salt industry, the small producers or *chao-hu*† are at the mercy of the dealers, and the dealers are at the mercy of the rich salt merchants, who, unlike the proprietors of the silk factories, enjoy a complete monopoly under government license in the marketing territories known as *ying-an*‡, and determine the amount of production as well as the

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\* The figures concerning the cocoon industry are taken from the official report of the Industrial Commissioner of Kiangsu for the second year of the Republic.

† 灶戶.

‡ 引岸.

price of the product with a regard solely to their own benefit. In a word, the small producers in each line of industry are dependent upon a particular set of merchants, who more or less form a kind of combination by common agreement, and are made to bear the brunt of sluggish market conditions, whereas any advantage that may accrue from high prices hardly reaches them at all.

From the above review of the industrial conditions of our country, is it still possible to say that the solution of the industrial problem should be left in the hands of those who are directly concerned with it? Is it also possible to expect that the problem will be solved by superficial reforms, as, for instance, by the establishment of a few small factories, in such favorite industries as toilet soap and patent medicine, while leaving the millions of small producers, who supply us with the bulk of our staple commodities, in the same unsatisfactory conditions as we now find them? Undoubtedly not; and that being the case, nothing short of an industrial transformation, which will take our country out of the State of Town Economy and put it into that of National Economy, can effect any solution at all. The whole industrial system must be changed, and the whole nation must be affected. The responsibility of effecting such a change and directing such a transformation is on every member of the nation, but particularly on the publicists and students of economics, because they ought to know the general situation better, and the means by

which the transformation can be carried out. Before the Franco-Prussian War of 1870, when Germany was not yet unified politically, and her economic conditions were nearly as bad as ours, Frederick List, and a few other economists, started a movement for the economic development of the German nation. They built the first railway; they promoted the organization of the Zollverein or Customs union; they investigated the economic conditions of the country and directed the development of its industries. And all through her later history, German industries have always received much attention and active co-operation of economists and journalists, until now their products have conquered the whole world. If our people will only have sufficient ambition to improve and willingness to co-operate, it will not be difficult to attain similar results.

In planning for an industrial transformation, special emphasis should be laid upon the improvement of manufacturing industries. Not only because China has been mainly an agricultural country, nor yet because industrial development has become to most people almost synonymous with development in manufacturing, but because that is the thing which will relieve the pressure of our population upon the means of subsistence. As is said in our first paragraphs, the industrial problem is in the first instance a national food problem; so, for that reason, our solution of the problem should begin with an improvement of the standard of living. In an old country, where cultivation has already become very

intensive, no amount of improvement in farming will very materially increase its products so as to raise the standard of living and augment the national wealth. Our land is in the stage of diminishing returns, as shown by the ever decreasing ratio of the actual corn rent to the nominal rent paid year after year by tenants to landlords. The returns to farmers per capita, under such conditions, are too small to maintain a comfortable living, and will be even smaller if cultivation becomes more intense. Hence to give employment to our large population, we need some industry that will give the largest per capita returns to the producer, and at the same time afford employment to the largest number of people. Manufacturing industry, because it embodies more human labor, and can be maintained for a long time in the stage of increasing, or at least constant, returns, is just the thing that suits our purpose. To it, therefore, we should pay more than the usual share of attention.

Moreover, there is a further reason for the special emphasis upon manufacturing industries, which consists in the following peculiarity in our industrial world. In our general survey a few paragraphs back, we pointed out the smallness of our manufacturers' premises, each with a small capital and a small number of men. Running through the list of our wealthy business men, we find among them very few manufacturers, but mostly merchants who make their fortunes by taking advantage of the price differences. Equally rare are educated people in the ranks of industrial producers, the exceptions being

the few proprietors of the bigger factories. On the other hand, in agriculture, although the farmers are not wealthy or educated, most well-to-do and educated people hold land as a form of investment. In commercial pursuits, the salt merchants are perhaps among the richest people of the country, while the old style bankers, though they cannot compare with the Rothschilds and the Morgans, come next in wealth. These people can read and write, and have some knowledge of the political and industrial conditions of the country. On the other hand, such cases are rarely found in the industrial class, which shows a paucity of talent as well as capital. We must give most help to those who most need it; hence we must pay greater attention to manufacturing industry. However, agriculture and commerce do not receive the lion's share of these two important factors of wealth, namely, capital and human talent, any more than manufacturing. They have some share, but the benefit is monopolized by certain branches of them, and the apportionment is far from satisfactory. Besides all these economical pursuits of life, much capital is wasted in needless consumption or tied up in useless hoards, and much human energy spent in conventional, unprogressive work, both mental and manual. To effect our industrial transformation, therefore, we need a redistribution of these two factors, and we must have them in a proper degree concentrated and "mobilized" throughout the country. Then, and only then, shall we be able to have in our country a system of National Economy.

## 10. The Industrial Revolution\*

*By Cheesman A. Herrick*

*What the Industrial Revolution Was.*—From about 1750 to about 1830 was a time of such economic change and adjustment that it is generally recognized as a revolution. Though these changes were seen first in England and first worked their result there, they extended to other countries. With this movement, as in the religious reformation of the sixteenth century and the political revolution of the eighteenth, new elements were and are being introduced into the life of the time and new adjustments were and are being made necessary. The great changes of the Industrial Revolution affected agriculture, manufactures, transportation, and commerce. Necessarily the ways the people lived, worked and thought were largely changed. From being a country of small freeholders with open field tillage, England became a modern agricultural nation with inclosed fields, practicing rotation of crops, and using improved tools and methods of cultivation. From being a country of handworkers, each carrying on his trade in his home or in a small establishment, she became a land filled with great factories in which the workmen were machine tenders. From being a nation largely economically self-sufficing, and one in which the various communities similarly provided for

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\* From "A History of Commerce and Industry;" New York; 1917. The Macmillan Company. Reprinted by permission.

most of their own needs, England became a workshop dependent on outside regions for raw materials and foodstuffs. For centuries little change had taken place either in agriculture or manufacture. Aristotle, it has been said, would have been quite at home in the economy of George Washington, but Washington would scarcely have recognized the economic order of fifty years later. The nations of the Napoleonic era underwent great changes in laws, governments, boundaries of countries, and spheres of influence, but even greater changes were introduced into the lives of the people. The invention of machines which do the work of millions of persons has made between the eighteenth century and the present almost as great a difference as the introduction of metal tools made between primitive savages and the inhabitants of historic Egypt and Babylonia.

The changes above mentioned resulted most largely from mechanical invention. The last half of the eighteenth century was notable for a "burst of inventive genius." The conditions of economic life were favorable to such a development. The "age of geographical discovery" had prepared for the "age of invention." England had eclipsed all rivals in the struggle for commercial supremacy: she had ships and capital. The demand was for *goods* and this demand led inevitably to the era of invention, which made the Industrial Revolution possible.

*The Agrarian Revolution.*—Changes in agriculture in the last half of the eighteenth century affected crops,

methods of tillage, and the life of the people. In 1750, two fifths of England's land was waste, being either bogs, fens, moors, or unimproved commons. Of the land under tillage, probably one half was held by the common field system, preventing individual improvements and the rotation of crops. Implements were of the sort used for centuries and were "primitive and wretched." In the main the land was held by small freeholders who carried on manufactures in their homes by the *domestic system*. The country was said to have had one hundred and eighty thousand of these freeholds at the opening of the eighteenth century.

Jethro Tull led the reforms in agriculture by the introduction of "drill husbandry" and "horse hoeing." He also introduced artificial grasses, such as clovers, and root crops, such as turnips. The new methods of tillage and rotation of crops removed the necessity for land to lie fallow. Lord Townshend adopted turnip cultivation with such zeal and followed it with such success that he was known as "Turnip Townshend." Robert Bakewell began in 1755 the improvement in sheep and cattle through breeding by selection and crossing. He developed sheep that gave wool as before, but which yielded much larger carcasses and more palatable mutton. Cattle were produced that dressed twice as much meat, and meat that was better for food purposes. Stock-raising also was made to supply manure for fertilizer. Gypsum was introduced for the same purpose.



Arthur Young traveled widely both in England and on the continent and wrote at length on agriculture. For thirty-eight years his observing mind and ready pen accelerated the movement for agricultural reform. Young urged larger farms, better drainage, rotation of crops, use of fertilizers, improvement of machinery, and grading of stock. Numerous societies and individuals offered prizes for various competitions in agricultural products. In 1793 a new era was inaugurated by the establishment of the British Board of Agriculture.

With the new method of enclosures, a shifting of the population was necessary, and the small holders were forced from the land and into the towns, where they engaged in the newer methods of manufacture. Despite improved methods in tillage, England was not able to supply her increasing need for food. In the twenty years from 1770 to 1790 the exports and imports of food supplies about balanced, but from the last named year the imports were in excess and England was fairly launched on her career as a *manufacturing nation*.

*Textile Manufactures.*—Manufactures in wool had for centuries been an important industry in England, but so few changes were introduced that Adam Smith could say in 1776 there had been only three inventions of note in the textile industries in three centuries. Here as elsewhere, invention was a growth; one built on the foundations which others had laid. Wyatt produced a device for roller spinning in 1730, but it was not generally adopted. In 1738 Kay invented his *fly shuttle*

which made it possible for one weaver, by the manipulation of cords, to pass a shuttle mechanically back and forth. Greater widths of cloth could be woven, and one weaver could do the work of at least two. The *carding cylinder*, a device for machine combing, was invented by Lewis Paul in 1748. Before this time wool was prepared for spinning by wooden combs used by hand.

Thus improvements in the preparation of wool for spinning and in the use of yarn which had been spun, intensified the demand for spinning machinery. The Royal Society offered a prize for a machine which could spin several threads at once. A device termed a *spinning jenny* was invented by James Hargreaves, and demonstrated that several spindles fixed on a movable frame could be made to turn and each do the work formerly done by a single spinner. Hargreaves' invention was completed in 1764, but was not patented until 1770. In 1769 Richard Arkwright patented his roller spinning machine which spun much faster than the jenny, though the jenny spun a finer thread. The next great improvement came with Samuel Crompton's *mule* (patented 1779) which joined the features of the inventions of Hargreaves and Arkwright. This new invention spun cotton thread finer than could be spun by hand and made possible the manufacture of muslins. The next great advance came with Edward Cartwright's *power loom*, which was patented in 1787. Numerous improvements were made in the power loom and it came into general use about 1800.

Hargreaves' first jenny had but eight spindles. The number in each frame was gradually increased until it reached two hundred by the opening of the nineteenth century, and the number has gone on increasing until a modern frame has more than a thousand. Inventions for textile machinery multiplied. In 1857 the testimony before an industrial commission was that the carding machines then in use embodied some sixty different inventions and that the spinning machines embodied eight hundred inventions.

Calico was introduced into England from India, and was so common in the eighteenth century that it was said "even poor persons could afford it." But the stamping of calico was by hand dies and therefore a time-consuming and expensive process. A great improvement came with Bell's invention of printing by brass cylinders (1783), by which the productive capacity of a man was multiplied a hundred fold. About the same time a new method of bleaching by use of acid shortened this process from months to days.

Eli Whitney's *cotton gin* (1793) was necessary to supply raw material for the mills of England. Before Whitney's invention, a day's work at cleaning would result in from one to six pounds of cotton. By use of the gin a man could clean a thousand pounds of cotton in a day. In 1764 England imported about four million pounds of cotton; in 1841 she imported five hundred million pounds. Cotton manufacture became a leading industry and cotton a staple import,—the supply coming largely from the United States.

*Iron and Steel Manufactures.*—The machines mentioned in the preceding section were made of iron and steel. Coal and iron are basal industries on which other industries depend. Scarcity of wood for charcoal had limited the iron industry in England, and made England dependent on an outside source of supply. The blast commonly used was a bellows worked by oxen or water power. In 1760 a new form of furnace was brought into use, with a cylinder blast which made possible the smelting of iron by use of coal. Roebuck took out a patent for this in 1762 and the iron industry had a rapid rise in the coal fields of the Midlands and the North ("The Black Country").

The invention above mentioned gave great impetus to *coal mining* and a new industry sprang up. New machines and steam power were utilized in mining. Thus one industry was bound up with another. The steam engine was used in the production of the blast in 1790 and greater efficiency was obtained when the air used in the blast was heated. Hardware and the finer forms of steel manufacture were developed in England, and next to textiles, the iron and steel industry was most important.

*Steam Engine.*—Probably the most important single mechanical invention which the world has yet known is the *steam engine*. The machines mentioned in the preceding sections would have been much less useful except for new means of supplying power. Those wonderful contrivances, the steamboat and the railway

locomotive, were made possible only by the use of steam. Steam substituted mechanical power for water power and muscular energy. The expansive power of steam had probably been known prior to the Christian era. As a scientific fact it had been adapted in various ways to utilitarian purposes—such as pumps. James Watt, of Glasgow, determined in 1764 that the volume of steam, at 212° and atmospheric pressure, is about seventeen hundred times greater than is water from which it is made. This great expansive power he utilized by introducing steam alternately into the two ends of a cylinder, thus forcing a piston head back and forth. Watt's invention, which was built on that of other experimenters, was patented in 1769; numerous improvements were added to it, one of the most important of which was the adoption of the so-called rotary principle. Watt entered into an important partnership with Boulton in 1781, and began the manufacture of steam engines for commercial purposes. In 1785 the first steam engine was used to run the machinery of a cotton mill.

*Roads.*—In 1760 trading in England was largely at markets and fairs. Roads, therefore, were necessary for travel to these centers. In the main, the highways were dirt roads, which were at all times rough and for a part of each year seemed almost bottomless mud. From 1760 to 1774 Parliament passed four hundred and fifty-two acts for road improvement, but most of these were local in purpose, authorizing private companies to establish toll roads. An act different in character was

passed in 1773 which was directed to the centralizing and systematizing of road construction. England then had great road builders, Telford, Macadam, and others, who worked as complete a revolution in constructing highways as was worked in agriculture, the textile and iron industries, and in the methods of supplying power. In brief, the new principle introduced was the superimposing of stone broken and crushed, in layers, with a smooth surface so rounded that it would shed water. The name of Macadam was often associated with these improved forms of road building.

*River and Canal Commerce.*—The rivers of England were navigable inland and contributed largely to England's commerce. In the period of the Industrial Revolution, however, important extensions and connections of the river systems were made in the form of canals. Canals had long existed in Holland, and they were also introduced into France in the seventeenth century. The value of canals was recognized in England by Parliamentary grants in 1755 and 1760. The first important canal was constructed by James Brinley in 1761 for the Duke of Bridgewater and connected the Duke's coal fields at Worsley with Manchester. This canal, called the Bridgewater, was extended to Liverpool. It was a success and others followed. The Grand Trunk Canal was completed in 1777, connecting the navigation of the Trent and the Mersey, a distance of ninety-six miles. The Grand Junction Canal, ninety miles in length, was completed in 1792, and

connected London with the principal towns of the Midlands district.

*Steam Navigation.*—The use of steam for navigation followed shortly after the steam engine was found to be a success, and numerous experiments were conducted during the last quarter of the eighteenth century, but it remained for Robert Fulton to make the demonstration of a successful steamboat. Fulton went abroad, where he studied and experimented. In 1806 he returned to America, bringing with him a Watt and Boulton engine. A hull was built, and the engine installed, after which the first steamboat, the *Clermont*, made the trip from New York to Albany (1807), taking two days. The *Clermont* soon made regular trips on the Hudson. Robert R. Livingston and Fulton, who had formed a partnership, were given a monopoly of steam navigation on the Hudson. John Stevens of New York also made a successful steamboat in 1807 and, securing a similar monopoly on the Delaware, brought his boat by sea to the Delaware Bay. A boat was soon placed on the Connecticut River, and Livingston and Fulton began the manufacture of steamboats at Pittsburgh. From this point they were extended to the various branches of the Mississippi navigation. The first successful steamboat in Great Britain was the *Comet*, built on the Clyde in 1812, and within a few years all important inland waters of the country were supplied with steamboats. This form of navigation was at first more important for river commerce than for ocean-going trade.

Ocean-going steam vessels followed, however. In 1819 the *Savannah*, with auxiliary engine, sailed from the city whose name she bore to Liverpool, making the voyage in twenty-five days. She continued her voyage to Russia and returned. The first ship to cross the ocean without the use of sails was the *Royal William*, which made the voyage from Quebec to London in 1833. The English Cunard Company sailed its first ship in 1840, and from this time use of steam for sea communication has grown steadily. The first ocean ships were, as most river steamboats still are, side-wheelers. The screw propeller was invented in 1836 and came into general use for ocean craft about 1850.

*The Locomotive.*—The difficulties of utilizing steam for transportation on land were greater than on the water. Roads with rails in the form of wooden stringers had long been used in England, and in the late eighteenth and early nineteenth centuries these stringers were finished with scraps of iron. Over these roads wagons or cars were drawn by horses. Such roads marked the beginnings of the railway.

The invention of the *locomotive*, like other great inventions, was an evolutionary process. Various experiments with a steam locomotive were tried during the first quarter of the nineteenth century. By accident it was discovered that smooth wheels revolving on a smooth track gave sufficient resistance to make a locomotive possible. To George Stephenson were due the greatest achievements in overcoming obstacles. He produced



his first locomotive in 1814, and continued his experiments. In 1825 Stephenson laid out the Stockton and Darlington railway, and three years later he entered the famous "Rainhill Trials" on the Liverpool and Manchester line, to determine whether stationary engines or locomotives were the most effective for hauling cars.

Stephenson introduced two revolutionary changes in the *tubular boiler* and *forced draft*. The tubular boiler was a boiler filled with small pipes, surrounded by water, which gave a largely increased heating surface. The forced draft, resulting from the use of the exhaust steam in the smokestack, largely increased combustion due to the air being drawn through the fire box. Thus, with more intense heat, and greater heating surface exposed to it, the steam-producing power of the locomotive was much greater. Stephenson's locomotive, the *Rocket*, was entirely successful in the trial over the Liverpool and Manchester road and demonstrated a speed of twenty-nine miles an hour. Within the next ten years in England, various important railway systems had been projected and the locomotive was accepted as a means of transportation.

America had much the same development. The horse railway was used at the quarries in both Pennsylvania and Massachusetts. In 1826 two "gravity railways" were introduced in connection with the coal mining operations in Pennsylvania. These consisted of hauling the cars up an elevation by means of a stationary engine and letting them run down by gravity to a place

where they were to be unloaded. The earliest steam railway, in the present use of the term, was the Baltimore and Ohio, the first rail of which was laid by Charles Carrol, on July 4, 1828. It so happened that Carrol was the last survivor of the signers of the Declaration of Independence and, as stated by President Hadley, one man's life thus connected the political revolution of the eighteenth century with the Industrial Revolution of the nineteenth. In 1830 thirteen miles of the Baltimore and Ohio Railway were opened for use.

The first locomotives were introduced from England, but soon Matthias W. Baldwin in Philadelphia, and Peter Cooper in New York, demonstrated that America, as well as England, could build locomotives. Within ten years, railroads were projected in all parts of the country, and they came to be of first importance in the new period ushered in by the Industrial Revolution. The use of steam in transportation pushed back the horizon of the economic world.

Revolutionary inventions later followed for the transmission of messages by telegraph and of sounds by the telephone. The telegraph has made the whole world a neighborhood, and the telephone transmits the human voice for thousands of miles.

*The Factory System.*—In no particulars were there greater changes from the Industrial Revolution than in the methods of manufacture. Adam Smith's account of making pins has served as a classic illustration of the advantages of the division of labor. Using Adam

Smith's system, ten persons could make 48,000 pins in a day. In a modern factory it is said that three persons can operate machines which will make 7,000,000 pins in a day. Other industries show as great or greater changes. To bring about such changes has meant the use of heavy machinery, requiring mechanical power to operate it, and substantial buildings to support it. As a result, large numbers of workers are centered in one building known as a factory. Other conditions, such as the presence of the means of power, or the availability of raw material, or the accessibility of a market, or the momentum of an early start, or a plentiful labor supply, or several of these acting together, have usually resulted in a number of factories being placed in the same locality. With these changes guilds had less and less to do, and either disappeared altogether or exercised only a "shadow of their former power." Guilds in France were swept away with other economic privileges in the French Revolution, and a last trace of them disappeared in Germany in 1869, when the North German Industrial Code was enacted.

The factory system was dependent on the means of power and changed the centers of population in England from the East and South to the center and North where were the deposits of coal. The population also shifted from a rural to an urban base. These changes presented new problems both economic and political. New labor laws termed "Factory Acts" were necessary, regulating such matters as labor of women and children, and health

and safety in working conditions. The first of these acts was passed in England in 1802 and the most important in 1834. Similar acts were later passed in the various American states. In England, these changes in population resulted also in a political revolution known as the Parliamentary Reform of 1832.

*England's Foreign Trade.*—Before 1760, England's trade with outside nations was relatively unimportant. Goods were largely produced in the regions where they were consumed. England, in common with the other nations before the Industrial Revolution, largely supplied her own needs. At the opening of the eighteenth century, England's exports amounted to less than one-sixth of the value of her home trade and at the same time the value of the imports was but one-twelfth the total consumption. The foreign trade was hindered by various regulations such as duties on imports, monopolized trade, and navigation laws. These laws were first modified in a special treaty which Pitt made with France in 1786 by which each country agreed to reduce the tariff against the commerce of the other. In the ten years from 1782 to 1792 the value of England's foreign trade almost doubled.

The *navigation laws* were severe. The first step toward the abrogation of these restrictions came in 1796 when the navigation acts were withdrawn from trade with the United States. Probably the demand for cotton following the inventions mentioned [in the section on *Textile Manufactures* above], and America's plentiful

supply of raw cotton following the invention of the cotton gin, had much to do with this action. The same policy was made to apply to Brazil in 1811 and to other Latin American countries in 1822. More liberal trade agreements were made with the United States immediately following the war of 1812-14. In 1823, the crown was authorized to make reciprocity agreements affecting the shipping and trade with foreign countries, and many such agreements were entered into during the next twenty years. The famous navigation law of 1660 was repealed in 1826. Huskisson and Robert Peel championed various laws abolishing trade restrictions. In 1845, a tariff reform bill was passed which removed the duties from 434 different articles, in part raw material and in part manufactures. From 1846 to 1849 there was a gradual reduction in the tariff on wheat, and in the last named year the duty ceased altogether except a nominal levy of one and one-half pence per bushel. This is termed "the abolition of the corn laws" and "the beginning of the free trade era."

*Summary of Results.*—The results of the Industrial Revolution were first and most largely evidenced in England. The first change to be noted was in the *population*. In 1700 an estimate gave the country five million people, in 1750 the estimate was six million; a census of 1801 showed over nine million; in the first thirty years of the nineteenth century, the increase was greater than during the entire eighteenth century. In

1700 it was estimated that one-fifth of the population was urban, but at the opening of the nineteenth century, dwellers in cities made one-third of the total. The same tendency continued until the cities became the determining factors in the social and political life of the country. Up to 1760 the land-owning class was supreme in the affairs of England, but from that time the capitalist class also exerted an influence. The Industrial Revolution developed a distinct laboring element which claimed recognition, first in matters of social and economic import, and later in political affairs. The changes affected international as well as national affairs. Says Professor Shotwell: "The mill and machinery not only made possible the overthrow of Napoleon, but they are the chief sources of Britain's greatness to-day." As a result of the Industrial Revolution, England changed from a domestic to an imperial nation.

With the coming of machine manufacture, it can be seen that *capital* assumed new significance. Under the domestic system the laborer was also capitalist, but under the factory system larger sums were necessary not only for machines, but also for raw materials and a food supply for laborers. The capitalists were often separated from the enterprise in which their capital was used and capital became "cosmopolitan and impersonal." These conditions have made necessary a new factor in modern industry, viz., the manager, or *entrepreneur*. It is he who finds raw materials, supplies of power, and necessary labor, and the capital required to operate these,

and brings all into effective co-operation. This agent was unknown before 1760.

Not only has economic life changed, but the *theory* which underlies it has also changed. In 1776 Adam Smith published his "Wealth of Nations" which is generally regarded as the first complete treatise on political economy. Adam Smith argued for less regulation and more working of natural law in economic affairs. Smith's work was followed by a remarkable essay on "The Principle of Population" by Thomas Malthus (1798) and a treatise on political economy by David Ricardo (1817). At first the old regulations of industry and trade were questioned and later they were repealed. As a result of the various changes of the Industrial Revolution, England adopted the economic policy of *laissez faire* or absence of government regulation.

The Industrial Revolution may be considered as an "era still in progress." The greatest changes and the earliest effects came to England which gave the impetus to the Revolution, but other countries felt and are feeling the results. One steam engine only had been introduced into France at the close of the Napoleonic era, but by 1847, the number had increased to five thousand. The consumption of raw cotton in France increased five times over in thirty years. Important manufactures were begun in Paris, Lyons, Lille, Marseilles, Bordeaux, and other cities. Germany did not feel the results of the Revolution until after 1833 and the greatest effects did not follow until after 1870.

## CHAPTER IV

### ELEMENTARY CONCEPTS

#### INTRODUCTION

Students of economics need to know the meaning of certain terms that are in constant use in the literature of the science. These terms are, in most cases, words that are in common and everyday use in the language. The economists have taken over these words and have given them a certain definite meaning in each case. The student must make sure, therefore, that he understands a term not only as a word in the English language but as it is used by writers on economics as well. The word "utility" is an excellent example of the necessity for this.

The chief terms that need to be understood in the beginning are the following: utility, scarcity, free goods, economic goods, wealth, income, value, capital, capital goods, producer's goods and consumer's goods. In addition it is important to know the distinction between the individual and the social point of view toward wealth, income and capital. The student should study these terms until he is sufficiently familiar with them to use them without feeling that they are strangers in his vocabulary. The chapter from Professor Carver's "Principles of Political Economy" is reprinted to show



the student how these terms are used by a writer who is careful to bring out the significance of the terms in a discussion of the welfare of the community.

The terms that are used by the economists have not at all times had the same force and meaning. The understanding of the terms as they are used to-day requires, for this reason, some knowledge of the history of economic thought. Enough of this history is given in the reading that is taken from one of Professor Cannan's works, to enable the student to see the importance of a knowledge of this history.

The student must not suppose that the only thing to be derived from the present chapter is a knowledge of terms. Much is to be learned from the clear presentation of some of the considerations that are of fundamental importance in economics. Much is to be learned from the refusal of both of the authors to use technical terms except in a simple and clear way.

This last point is one that needs emphasis among Chinese students. You are using a foreign language and you are learning to use technical terms in that foreign language. The temptation will come to you to cover up your own lack of clear understanding upon some point by the quoting of a phrase that sounds highly "scientific." All of us have seen this attempted from time to time. It is well to remember that scientific terms and technical phrases are aids to thought and they must never be used or accepted as substitutes for thought. If you find yourself unable to say what you

think in simple and plain language it is probable that the use of technical terms and phrases will make your unclear meaning still more unclear. Both Professor Carver and Professor Cannan show that they have nothing but scorn for a pedantic use of technical terminology and their writings are worth reading for this reason as well as for the others that have been given.

When the student is able to use the terms that are used in this chapter with a clear understanding of the meaning of each term, he will have made some progress as a student of economics.

## 11. Wealth and Well-Being\*

*By T. N. Carver*

*What are economic goods?* Before we can go very far in our study of income and expenditure, or of production and consumption, we must get a fairly clear idea as to the sort of things that make up income, or the sort of things that men try to produce. When it was stated in the last chapter that the necessity for economy arose out of the fact of scarcity, it might have been guessed at once that the things that make up one's income in a strictly economic sense are the things that are scarce. More accurately, perhaps, we should say that the only things we try to produce are the things of which we do not have enough. It may sound a little queer at first

\* T. N. Carver, "Principles of Political Economy." Ginn & Co., New York. Reprinted by permission.

for one to say that his income consists of things that are scarce, or things of which he does not have enough. It will therefore be necessary to spend some time in making this point absolutely clear; otherwise we shall never be free from error and confusion. As a matter of fact, the very first step toward a true understanding of the nature of wealth is a clear perception that wealth in the economic sense consists of things that are scarce and so need to be economized. When it is said that the necessity for economy grows out of scarcity, and that we only try to produce the things that are scarce, we do not imply that everything is scarce. Some very useful things are very abundant,—so abundant that everyone can have all that he wants; and when he gets all he wants, no one else is deprived of anything that he wants. Such things do not have to be economized; hence they are not economic goods. In fact, so long as they are sufficiently abundant, they give us no concern; but when they become scarce, we spend our time in trying to get more. Only those things are economic goods which have to be economized, that is, which are scarce, or of which we do not have as much as we should like to have.

*Two meanings of wealth.* Now the word *wealth* has two meanings. In the first place, it is the collective name for all economic goods, for all goods that have to be economized,—that is, for goods that are scarce. In the second place, it is the name of a condition or state of being. It comes from the older word *weal*, which means

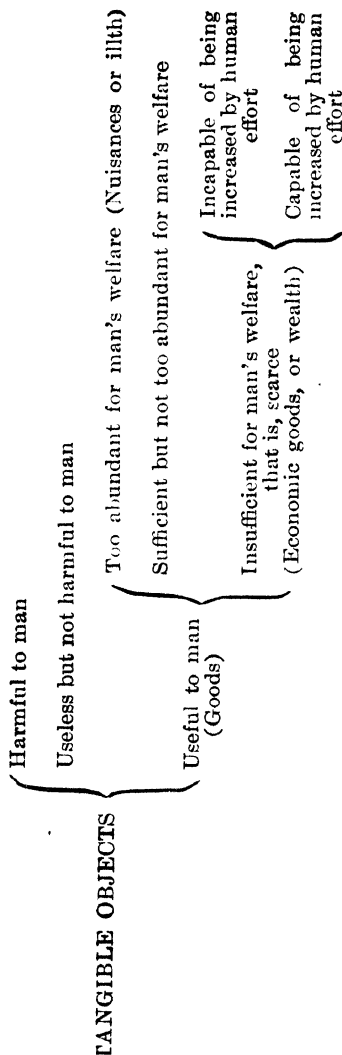
very much the same as *well-being*. These two meanings, while apparently different, are yet very closely related. The condition of well-being which we call wealth depends upon the possession of an adequate supply of those things which we call wealth, that is, the things which are ordinarily scarce and which have to be economized. He who lacks an adequate supply is poor; he who possesses an adequate supply is rich or in a state of wealth. In short, those economic goods called wealth are the goods upon which weal, or well-being, depends. Well-being is increased when these goods are increased or economized; well-being is decreased when these goods are decreased or wasted.

*How well-being depends upon wealth.* This could not be said of anything which is not scarce. There is such an abundance of air, for example, under ordinary circumstances, that no one would be better off than he is now if the supply of air could be increased, nor would anyone be any worse off if the supply of air were slightly decreased. In other words, no one's well-being depends upon *more* air, even if it could be produced. If, however, air was so scarce that there was not enough to go around, then not only would it need to be economized very carefully, but there would be some advantage in producing more of it. The weal, or well-being, of mankind would be improved in proportion as more air could be produced; mankind would be injured in proportion as air was wasted or destroyed. While, therefore, we can say that air is a necessity in a

certain absolute sense, yet in a practical economic sense we cannot say that anyone would be better off if more air were produced or if it were even wisely economized; nor can we say that anyone would be worse off if a little air were destroyed or wasted. There would still be enough to satisfy everybody. That is why air, though an absolute necessity, is not an economic good. We should gain nothing by trying to increase the supply or to economize in the use of the existing supply. Since we do not gain anything by economizing it, it is not an economic good. Where abnormal circumstances arise, in which there is not enough air, then it has to be economized and becomes at that particular time and place an economic good. If such circumstances could last, air would become wealth in the same sense that food, clothing, fuel, and certain other things are now wealth. It would then be true of air, as of these other things, that well-being could be increased by producing or economizing air and decreased by destroying it, wasting it, or otherwise making it scarcer.

*The question of having more or having less.* Water is another illustration, perhaps a better one, because there are many places where water is so abundant that it does not have to be economized at all, while there are other places where it is so scarce that it has to be economized very carefully indeed. In the former places water is not wealth; in the latter it is. In the former no one labors to secure any more; in the latter they

do. In the former no one would be better off if there were more water; in the latter some people would be better off. In the former, well-being does not depend upon a little more or a little less water; in the latter it does. In the former class of cases there is no occasion for economizing water; in the latter it is very important that it be economized and made to go as far as possible. In the former class of cases the formula "more water, greater well-being; less water, less well-being" is not true; in the latter it is true. This is the test in every time and place as to whether water is wealth or not. All that has been said of water may be said of anything else. The same test must be applied to determine whether it is wealth or not. As a matter of fact, water, like a great many other things, is sometimes too abundant,—so abundant that men find it to their advantage to go to considerable pains to get rid of some of it or to lessen the supply. In such cases it may be called *illth*. In the diagram below is a classification of all tangible objects with which it would be possible for man to concern himself. Those which are harmful to him he must try to exterminate. Toward those which are useless without being in the way or being otherwise harmful, he is indifferent. Those which are useful to him, called goods, concern him most. Of these, some are too abundant at certain times and places. In such times and places his attitude toward them must be very much the same as that toward those that are positively harmful. Yet when they exist in smaller quantities,



Particular attention is called to certain resemblances between objects which are positively harmful and those which, though in themselves useful, become, at certain times and places, harmful through their too great abundance. Man's attitude is likely to be hostile to both alike. There is also a certain resemblance between those which are useless but not harmful and those which are useful but sufficient. Man's attitude towards both is likely to be that of indifference.

that is, in quantities less than he needs, he will strive as hard to get more as he will strive to reduce the supply when it is too abundant. Water in swampy land is an example of overabundance; in desert land, of underabundance. Manure in a city livery stable is an equally good example of overabundance; in a sterile field, of underabundance. If the owner of the stable could not sell the manure, or induce someone to take it away, he would be willing to pay someone to remove it. To the market gardener it is wealth; and if he cannot otherwise secure it, he will pay the owner of the stable for it. In that case it is scarce from the standpoint of the whole community, and is therefore social wealth. If, however, there is more than even the market gardeners and farmers can use, they would be paid for hauling it away instead of having to pay for the privilege. Such goods, when they are overabundant, may, as suggested above, be called *illth*, to distinguish them from those which are underabundant and called *wealth*.

*Relation of value to economic goods.* We have gone to considerable pains to point out that one characteristic of economic goods is that they are always scarce. It is this which gives them the power to induce men to work. Another characteristic is that they all have value, or power in exchange. The power to command other desirable things in peaceful and voluntary exchange—that is, value—is very much the same as the power to induce men to work. That is to say, the thing which possesses one kind of power will always possess the



other, if indeed it be not incorrect to speak of them as different kinds of power. The object which possesses this power to appeal to human motives in such a way as to induce men either to give up some desirable object in exchange for it or to labor in order to produce it, is always said to be valuable. This power depends in all cases upon the scarcity or insufficiency of the existing supply of the object in question. This simply amounts to the truism that a thing would not possess this power unless some one could be found who wanted more of it than he had. If a person or a considerable number of persons can be found who want more than they have, there will be some one who will give up something in order to get more or will work in order to produce more. These things, again, are economic goods, or wealth. Since, as we have just shown, they all possess value, it amounts to the same thing to say that wealth consists of things that have value. In short, such words as *wealth*, *value*, *economic goods*, and *economy* all center around the one great fact of scarcity, that is, the insufficiency of certain things at certain times and places to satisfy desires. Out of this great fact grow also such ideas as property, industry, and foresight. No one wants to secure property rights, for example, in anything of which everybody has enough. But when anyone fears that there may not be enough of a certain thing to go around, and that he may, therefore, be left out, he naturally wants to guard against that calamity by getting possession of a supply. He

will try to get possession of a supply either by producing it himself or by buying it of someone else, and he will try to guard his treasure carefully. When the state steps in and undertakes to protect him in his possession, he has then secured a property right in the thing in question. Again, productive industry, as already shown, is directed toward alleviating scarcity or increasing the supply of something whose supply would otherwise be insufficient. Frugality and foresight are exercised to provide against further scarcity.

*Meaning of scarcity.* Now scarcity means nothing except insufficiency in a given time and place to satisfy the desires which exist in that time and place. It does not mean rarity, because, no matter how rare a thing may be, if there is as much as is wanted, it is not scarce; and no matter how great the total quantity, if there is less than is wanted, it is insufficient, or scarce. And it is always well to bear in mind that a thing is scarce, if at all, because the available quantity *in a given time and place* is insufficient. No matter how much water there may be in the Mississippi River, it does not alter the fact that water is scarce a few hundred miles to the westward; no matter how much copper there may be in the bowels of the earth, it does not alter the fact that there is less copper in available form than is needed on the surface. It is this fact which induces men to labor to move things from one place to another.

Before proceeding farther it is necessary to make one important qualification. Men do not always know

upon what their weal, or well-being, depends. If they are mistaken on any phase of this question, they will be placing a high value upon some things that are not good for them, and a low value or no value at all upon some things that are good for them. They are poor economizers who do this, but there are many poor economizers in the world. This is the same as saying that they will sometimes desire more of a thing than they have, when they really have too much already, or less than they have, when they really have too little already. With this qualification in view, all that we can say is that men will *regard* as wealth everything upon which they *think* their well-being depends in the practical economics sense described above. That is, if they *think* they need more than they have, they will strive to get more, either by offering something for it, thus giving it a market value, or by trying to produce it, thus creating an industry. This explains why it is that the student of economics is compelled to include among economic goods, or wealth, articles which he himself would not use or which he regards as deleterious, such as opium, alcoholic drinks, or tobacco.

*Importance of desiring the right things.* Teaching or persuading people to want the right things has commonly been regarded as the work of the educator and the preacher rather than the economist. The latter has not generally undertaken to pass judgment on the wants of the people. He has assumed, rather, that his work was done when he had shown how such wants as

the people happen to have are satisfied and may be satisfied more and more fully. But no one who really has at heart the welfare of the people can be indifferent to the quality of their wants or desires. What men want most they will try hardest to get; the character of their wants or desires, rather than their real needs, will therefore determine the character of their industries and their government. But, more important than that, if their desires are opposed to their needs (that is, if they desire things that are harmful to them), then the more efficient their system of production becomes the more harm they will do themselves. In that case an efficient industrial system promotes national deterioration rather than national well-being. If one were to make a study of the wreckage of nations, one would probably find that more had decayed because their wants were wrong than because they were not able to supply their wants. That is one reason why, as stated earlier in this chapter, the subject of consumption is of such tremendous importance.

*Necessity of economizing means of production.* Thus far in discussing the necessity for economy we have been considering the direct satisfaction of wants and the means thereto. But the necessity for economy extends much farther than this. In the effort to overcome scarcity, that is, in the production of goods, it is necessary to make use of various factors of production, such as labor, tools, raw materials, etc. These also are scarce and have to be economized. To be sure, many things.

that are essential to production are not scarce. These are not considered as factors of production; that is, they are not *economic* factors of production at all. Carbon dioxide is just as essential to the growing of plants as nitrogen, phosphorus, or potash; but there is plenty of carbon dioxide in the air, whereas in most soils nitrogen, phosphorus, and potash are scarce or tending to become scarce. Therefore these three substances are considered as factors (that is, economic factors) in plant growth. Applying the same formula here as we did to other things earlier in this discussion, we can say, and say truly, "More nitrogen, more plant growth; less nitrogen, less plant growth." Therefore agricultural production is increased by increasing the nitrogen in the soil. The same may be said of phosphorus and potash, but the formula does not seem to apply to carbon dioxide. This is a principle of the very greatest importance, as will be seen later. Some of the greatest problems in economics and social justice depend upon this principle and are incapable of solution without it.

*Why a thing has value.* The fact that desirability and scarcity, and these alone, give value to a thing is perhaps clearly enough established by this time. Few will care to question the statement that not only must a thing be desired, but more must be desired than there is to be had, before men will strive to get more either by purchase or by production. Moreover, this is as true of a factor used in production, such as tools, as of an article of direct consumption, such as bread. It may

not be quite so obvious, but it is none the less true, that this is also one of the great sources of that conflict of human interests which gives rise to most of our problems of justice and equity.

#### TEN CHARACTERISTICS OF ECONOMIC GOODS, OR WEALTH

1. They are scarce; that is, there is less of them than is wanted.
2. They have to be economized.
3. Well-being is thought to increase as they increase and to decrease as they decrease.
4. Men labor to produce them, that is, to make them less scarce.
5. Men try to secure them by purchase.
6. They have value, or power in exchange.
7. They become the subject of property rights.
8. Wise men exercise frugality and foresight with respect to them.
9. There is a conflict of interests among men with regard to them, because there is not enough of them to go around and satisfy everybody.
10. They give rise to questions of justice and equity.

## 12. The Subject Matter of Economics \*

*By Edwin Cannan*

There is no reason for not accepting the time-honored identification of the subject matter of economics with "wealth." At any rate, I intend to accept it in the present work, and consequently I shall treat the question "What is wealth?" as exactly the same question as "What is it most convenient to take as the subject matter of economics?" Most convenient, I say,

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\* From "Wealth," by Edwin Cannan, London, 1917. P. S. King & Son, Ltd. Orchard House, Westminster. Price 6s. Reprinted by permission.

because economics is a department of science, and therefore the question what should be included in it is a question of the most convenient delimitation of the different departments of science.

To such a question the practice of writers and oral teachers usually furnishes a better answer than their preliminary search for a definition which they hope will fit the matter of their investigations. I proceed, therefore, to ask what is, in fact, the usual subject matter of books and lectures on economics.

It is, in the first place, undoubtedly something possessed or enjoyed by human beings. It is true that when economics first began to stand out as a separate department of science, the economists stepped straight into controversies about national wealth and it did not occur to them to ask themselves definitely whether they had to do with any other body than "the nation." So when Steuart, in 1767, called his large work "An Inquiry into the Principles of Political Economy," the term "political" indicated that he intended to discuss national wealth. Adam Smith, ten years later, probably imagining himself precluded from giving his book the same title as Steuart's, used "An Inquiry into the Nature and Causes of the Wealth of Nations" as synonymous. In the more general parts of his treatise, however, he often substitutes "the society" for "the nation," and it is clear that he intended his work to cover more than a literal interpretation of the title would include. Later writers have often used the word "community" in the

same way as Adam Smith used "society," and have spoken of "the wealth of the community" when they massed into one body all the human beings with whom they were dealing.

All economists have considered the wealth of classes and individuals within the community as well as that of the whole community, so that it may be said that neither the use of the term "political" in "political economy" nor the use of the term "nation" is to be taken as intended to confine the science to the wealth of nations. The subject matter of political economy or economics has always been the wealth of human beings generally.

Originally "wealth" in ordinary English was the name of a state or condition of human beings such as is suggested by the prayer for the King in the Book of Common Prayer, "Grant him in health and wealth long to live." The suffix *th* indicates a state or condition, so that "wealth" indicated the state or condition of being well, or as we should say in modern English, prosperous, just as "health" indicated the state of being healed or free from disease. But in course of time the word came to be applied to money and other concrete things, command over which made a person live in wealth. In the eighteenth century some writers found it necessary to protest against the view that national policy should be directed toward the aim of securing a perpetual increase of the gold and silver within the national territory. In doing so they very naturally



said that wealth did not consist entirely of gold and silver, but also of certain other concrete things, such as horses and cattle, houses and orchards. This led them to lose sight of the older meaning of wealth as a state or condition of human beings, and to regard it rather as certain material possessions of human beings.

Most of the statements which an economist is likely to make relate to quantities: he deals with increases and decreases. It is impossible to make statements about increases and decreases of the wealth of human beings if their wealth is supposed to consist merely of certain concrete objects without reference to time. Propositions about increases of tables, chairs, or loaves, which at first sight appear intelligible enough, are as meaningless as propositions about the increase of rain-drops without reference to time would at once appear to us. It is quite true that we do not usually find bare statements that tables, chairs, or loaves have increased unintelligible, but that is because from the context or by some other means we have gathered that the statement refers to these things, not in the abstract, but in some definite relation to time. We are led to think of the tables and chairs in the world or some part of the world at some one instant of time, such as a week or a year.

But till quite lately the searchers for a formal definition of "wealth" overlooked this point, and great confusion resulted from the oversight. The more primitive the economy of a people, the more likely are

they to have regard to their possessions at a point of time rather than to what they can expect to receive as time passes. The poorer a person is, the more likely is he to think of what he has at the moment and the less of his receipts in the past or his prospects of receipts in the future. The question "How much a year have you?" or even "How much a week?" is not one which occurs to primitive man or even at the present time to a man of the lowest class or to a child of any class in the most "advanced" countries. To them the question is "How much have you got?" Hence it is not surprising that the collection of objects which a man of the seventeenth or eighteenth century would usually have in his mind when he talked of increases or decreases of wealth, would be the collection of things in existence at a point of time rather than the amount coming in or being created per annum or per diem. Nor is it surprising that in cultivated society the conception of a periodical receipt should have subsequently forced its way in and overpowered the conception of a realized amount.

It is, however, perhaps rather surprising that the transition from one idea to the other should have taken place without economists noticing the change. An explanation which is at least plausible may be given. Adam Smith greatly facilitated the transition by first calling his book "An Inquiry into the Nature and Causes of the Wealth of Nations," and then deliberately defining the wealth of a nation as its "annual produce," or

"the necessities or conveniencies of life which it annually consumes." But he did not notice the difference between the wealth of a nation defined in this way and the conception of it as a number of things possessed at a point of time, because he was engrossed with the desire to protest against the cruder conception of it as the amount of gold and silver possessed. Thus instead of saying that the wealth of a nation is not the land, cattle, machinery, and other things possessed by it at a point of time, but rather the annual produce of the land and labor of the people, he says it is not gold and silver, but the annual produce. Later writers for a long time followed him in making the same antithesis, and were thus led, like him, into overlooking the really important part of the change which was being made.

Whatever the explanation may be, there is no doubt that economists did fail to indicate clearly in their definitions of wealth whether the wealth of persons and peoples, which alone could be meant when quantitative statements were made about "wealth," was the collection of things possessed by them at a point of time or the collection produced by them, or somehow obtained by them, within a length of time. But in their practice they usually followed Adam Smith. Dealing, like him, with the "production" and "distribution" of wealth, they were obliged to keep length of time in their minds: the production of wealth was greater or less according as more or less was produced per annum, and the distribution of wealth, as he and they conceived it, was the

distribution of the annual produce. Thus, in spite of the absence of definitions indicating the fact, the "wealth" with which economists generally intended to deal when they made quantitative statements concerning it was the wealth periodically produced or coming in, and we can now proceed to inquire of what this was supposed to consist.

The English statisticians of the latter part of the seventeenth century regarded the annual produce of the country with the eyes of a farmer. They thought of the raw produce of a farm, and regarded this as forming the subsistence of the whole of the people. The French *économistes*, or physiocrats, the followers of Quesnay, had the same agricultural standpoint, and made the doctrine more definite by expressly denying the quality of productivity to all labor not employed immediately on the land. Adam Smith made a change in the right direction by including in "productive" labor not only the labor employed immediately on the land, but also all other labor which improved material objects, and thus, as he said, did not perish in the very instant of its performance. Probably he would not have halted here if it had not happened that he mixed up the question of productive and unproductive labor with an inquiry into the accumulation of capital, and was thus insensibly led to ask himself what labor produces capital instead of what labor produces "produce." J. B. Say saw the weakness of his position, and extended the notion of productive labor to cover "non-material."

products. From his time, in spite of J. S. Mill, who here, as often, tried to furbish up the obsolete, the annual produce was generally regarded as consisting of "services" as well as "commodities."

The annual produce was sometimes for greater accuracy called the "net produce," because it was seen that care must be taken to avoid double or triple reckoning of the same thing, which would occur if, for example, iron ore, pig iron, and iron pokers were all added together. The annual produce, or more precisely, the annual net produce, consequently came to be regarded as consisting only of those commodities and services which actually reach the consumer, *plus* those commodities which were added to the existing stock of commodities and *minus* those which were deducted from the existing stock. The consumer here was of course the final consumer, who consumes for his own satisfaction and not in order to secure some further result; for example, the consumer of wheat was the person who ate it in whatever form, not the miller or the baker.

Now, there are no means by which we can actually distinguish net produce from gross produce in this way, if we approach the subject from the side of the producer. A few commodities, such as loaves of bread, may be supposed without material inaccuracy to belong entirely to net produce. But many commodities are used both for immediate satisfaction and for further production, and there is no way, from the producer's side, of distinguishing which parts are used in one way and

which in the other. For example, of lubricating oil, the quantity used in a cotton-spinning factory will be a means toward the production of another commodity, cotton cloth: the quantity used in running a motor car for pleasure will fall into net produce. Again, gas is sent out from the same gas-works to persons who use some of their supply for driving a gas-engine to make something which they sell, and some to light their own dinner table. Another great difficulty arises from the fact that when the stock of existing things which are used by man is, as continually happens, depleted by the subtraction of some things and increased by the accession of other things, there is no way of marking out the gross additions into two parts, the net additions and the remainder. Suppose the stock of ships is diminished by the sinking or breaking up of three hundred small sailing ships and increased by the addition of fifty large steamers; it would be misleading to say simply that the number of ships was reduced by two hundred and fifty, while on the other hand, any calculation as to the relative carrying capacity of sailing ships and steamers and a consequent reduction of the two to some common measure involves all sorts of assumptions and conjectures.

A perception, not always very distinct, of these difficulties has gradually led to the substitution of "income" for "produce" or "net produce." One of Marshall's suggestions for the definition of economics at the beginning of the earlier editions of his *great work*

was "how man gets his income, and how he uses it." Here we approach the subject from a different side. Instead of starting from the land and labor and trying to trace the product through its various stages, excluding double reckonings as we go, we look in the first place at the valuation of the net results which we get by considering individuals' money-incomes.

But money-income does not always include everything which we should regard as belonging to the net produce. Nearly all farmers consume part of their own produce, most wives perform domestic duties of a kind which add to the material welfare of themselves and their families, and so on. Observing this, economists have been led to add to the actual money-income a money-valuation of all economic services and commodities which are not accounted for in the money-income. This plan encounters two difficulties. How are we to decide what is economic, and how are we to value? Are the services of a mother to her child economic, and are they to be appraised at the same money-value as those of a wet-nurse?

Supposing these difficulties to be surmounted, we find ourselves dealing with a sum of money supposed to represent the commodities and services of an economic character which are enjoyed, *plus* those commodities which form the net addition to the stock of useful things. But quantitative statements about this sum of money are not satisfying by themselves. If we say the income of the community has increased, we do not want

to be met with the retort, "The income valued in money may have gone up, but that is only due to a fall in the value of gold. The increased sum of money at which you value the income means no more and no better commodities and services than before." Consequently we are driven to "go behind" the valuation by inquiring into the purchasing power of money, and so the adoption of the money-estimate of income does not in the least relieve us from the necessity of considering the "real" income. The inquirer who has been told that income consists of commodities and services, still wants to know how that quantity is to be measured.

When commodities and services of different kinds are concerned, there is clearly no possibility of comparing the quantities intelligibly by weight, bulk, or number. We might say that a collection of things consisting of one loaf of bread, one pound of beef, one pint of beer, and one railway ticket is equal to half of a collection of things consisting of two similar loaves of bread, two similar pounds of beef, two similar pints of beer, and two similar railway tickets. But we cannot make any statement about the relative quantities included in two collections, one of which consists, as before, of one loaf, one pound of beef, one pint of beer, and one railway ticket, and the other collection of three loaves, half a pound of beef, and two railway tickets. At first sight of the problem we may think we can, but a moment's reflection makes us see that the comparison we then have in our minds is one of values, not of quantities.



If we drop quantities and compare values, we are satisfied so long as no doubt is raised as to the invariability of our standard. At the same time and place our standard will always "mean the same thing" in regard to the two collections of commodities and services we are considering, but as soon as the places differ, and still more as soon as the times differ, we begin to question whether the measure of value means the same thing at the two places or times. We then invariably find that it does not. Whatever standard be taken, at the one place or time some commodities or services which are worth little of it at one place or time are wholly unprocurable by the offer of any quantity of it at the other place or time.

Eventually we find ourselves groping after a measure of the good effect of the commodities and services upon the persons who get them; we find we really want to know whether a person or body of persons with such and such an "income" in pounds sterling (or consisting of such and such commodities and services) is what we usually call as "well off" as another person or body of persons with such and such other income in pounds sterling (or consisting of such and such other commodities and services) at some other place or time.

Moreover, recent economic analysis has drawn attention to the fact that even where quantity can be measured by weight or bulk, the effect of the enjoyment of these commodities on the persons who enjoy them

cannot be regarded as proportionate to the quantity. Six loaves of bread consumed per day, it is pointed out, will not make a man six times better off than one per day. Even £6,000 a year to be spent as he pleases will not make a man six times as well off as if he had only £1,000 a year. With £6,000 a year he will not consume six loaves instead of one; by introducing variety he can retard the fall of utility, but he cannot altogether prevent it. With the larger income he must spend some of his pounds sterling on more trivial satisfactions than would be obtained by the least important pounds spent out of the £1,000 a year.

In the last forty years it has consequently been the practice of economic teachers to deal more and more with the ultimate results of the possession, use, and consumption of commodities and services, regarding these commodities and services as the means to an end rather than an end in themselves. So, instead of having our attention directed entirely to outward objects and particular actions, we find ourselves considering "utility" or "satisfaction." Nor is this all. The democratization of literature and political science which has taken place since the earlier part of the eighteenth century has led to the practice of bringing into account the pain and irksome toil involved in the creation of positive utility or satisfaction. Most economic writers before Adam Smith, and some after him, regarded the interests of the "nation" in some way which enabled them to exclude the interests of the "working classes" as we call

them. Most of the pain and irksome toil of production fall on this portion of the people, so that the exclusion of the working classes from the nation led to a neglect of all consideration of the pain and irksome toil involved in procuring "wealth" for the nation. Whether the working classes should labor for ten hours or for sixteen was a question to be determined solely by discovering which number of hours produced the greater amount of commodities. The idea of deliberately sacrificing positive utility or satisfaction in order to have greater leisure was scarcely thought of. If he advocated it at all, an economist would regard himself as deliberately suggesting an economic sacrifice in order to secure a non-economic but greater good. Most recent economists would unhesitatingly reject this view, and regard the economic condition of a people who had a certain amount of positive satisfactions and worked ten hours a day as superior to that of a people who had the same satisfactions of a positive kind but worked sixteen hours to obtain them.

Thus the subject matter of economics has become utility or satisfaction *minus* disutility or dissatisfaction, so that if we retain "wealth" as its compendious description, we must take "wealth" as having reverted to its old meaning of a particular state or condition of human beings.

What that state or condition exactly is, however, it is not very easy to say. It is compounded of satisfactions and dissatisfactions, but these are by no means

exclusively economic: there are plenty of them which no one in his senses and with any regard to the ordinary usages of language would call economic, and which no one with any regard to the convenient delimitation of sciences would attempt to treat in a work on economics.

Till recently most economists, if asked to distinguish between satisfactions of an economic and uneconomic character, would have said that the economic could be bought and sold, and also said or implied that the non-economic could not be bought and sold. There are, however, several difficulties to be overcome before this can be accepted as furnishing a criterion for distinguishing what is actually treated in economic works from what is not. On the one hand, it seems to exclude from economics many things which are actually included by every economist, or would be included by him if he happened to come across them. That the satisfaction which some hundreds of thousands of people enjoy every week from the use of Hyde Park is an economic one, no economist would think of denying, but it seems impossible to describe that satisfaction as even potentially exchangeable or subject to purchase and sale. Again, if it were discovered that Mars was inhabited by people like us, and that the Martians found satisfaction in food, clothes, and shelter just as we do, no economist would be prevented from comparing the economic condition of the Martians with our own by the further discovery that the Martians had not established a system of private property nor practised exchange. Yet in that case could

it reasonably be said that the satisfactions of being fed, clothed, and sheltered were saleable in Mars? And if not, would the fact of similar things being saleable on the earth be sufficient to justify us in regarding them as "potentially saleable" in Mars? On the other hand, the criterion of buying and selling brings many things into economics which are not commonly treated there and which it does not seem convenient to treat there. A large trade has existed since (and no doubt before) history began in supplying certain satisfactions of a sensual character which are never regarded as economic goods. Indulgences to commit what would otherwise be regarded as offences against religion or morality have been sold, sometimes openly and almost at all times under some thin disguise: nobody has regarded these as economic goods.

The economists who have distinguished the sphere of economics by the aid of this test seem after all to have treated of just the same subjects as are described as economic in the everyday conversation of educated people. In such conversation the term has no necessary reference to buying and selling, nor to the potentiality of being bought and sold. We talk of "economic questions," "economic interests," and "the economic point of view." We separate economic questions from religious questions, from literary questions, from historical questions, and from hundreds of other questions. We inquire whether in some particular case the economic interests of some persons are opposed to their political or

their religious interests. We regard some things as desirable from an economic point of view which for some non-economic reasons we reject as on the whole undesirable.

In these and similar phrases the term economic conveys to our mind an impression about which we have so little doubt that we find it difficult to define, in the same way and for the same reason as we find it difficult to explain what we mean by the terms "blue" or "red." Confronted suddenly by the word "blue," a weather optimist thinks of the sky; some of us think of the block marked "blue" in the box of paints with which we dabbled when we were children, others of our first or last blue frock. Confronted by the word "economic," one man may think first of coins, another of figures in bank-books, another of crops growing in the field and cattle browsing in the meadow, and another of the morning crowd going to its work in some great city. None of them will come at all creditably through a cross-examination on any definition which they may construct either on the spur of the moment or after considerable reflection. But if one example after another were put before them all, they would be found to agree, at any rate very nearly, as to what things were to be included and what excluded from the list of things economic.

They would agree, for instance, that the question "Was Mohammed the Prophet of God?" was not an economic one, and that the prohibition of pork as

human food was of economic interest. They would agree that "Did Bacon write Shakespeare?" was not an economic question, and that the satisfaction which believers in the cryptogram would feel if it were universally accepted that Bacon did write Shakespeare would not be an economic satisfaction, while on the other hand they would agree that the controversy would have an economic side if copyright were perpetual and the descendants of Shakespeare and Bacon were disputing the ownership of the plays.

If their examination were continued, and more and more examples adduced, they would soon begin to say that there is no "hard and fast line" between economic and non-economic things, but that the one shades gradually into the other, as blue neckties shade into green, so that there are some ties which some persons call green while others call them blue, although everyone is agreed that the sky (in fine weather) is blue and the grass green, so there are some things which some persons call economic and others non-economic, although everyone is agreed that the satisfaction of hunger is economic, and that the satisfaction which a Tibetan fanatic feels when he has himself immured for life in the dark is non-economic.

For ordinary purposes economic things can best be described as economic, just as blue things can best be described as blue. But if we must have a second-best description for the benefit of those who doubt whether they know what is meant by the term economic, I think

we must fall back on "having to do with the more material side of human happiness," or more shortly, "having to do with material welfare."

The exact phrase used does not really matter very much, since we must face, and face boldly, the fact that there is no precise line between economic and non-economic satisfactions, and therefore the province of economics cannot be marked out by a row of posts or a fence like a political territory or a landed property. We can proceed from the undoubtedly economic at one end of the scale to the undoubtedly non-economic at the other end without finding anywhere a fence to climb or a ditch to cross. Beginning with the satisfaction of hunger and thirst as the most material, we can arrange other satisfactions roughly in order, till at last we arrive at the most purely non-material, such as that felt by a martyr dying of starvation rather than abjure his God. We shall never be able to say that 99 per cent of such a martyr's welfare was non-material and due to religious fervor and the remaining 1 per cent was material and due to the sustaining effects of the food he ate a week before. We shall never be able to say of any man that 50 per cent of his welfare came from food, clothing, shelter, pictures, and concerts, 25 per cent from the love of his wife, 15 per cent from his support of his church, and 10 per cent from his pride in his position as president of the local party caucus. But we can quite legitimately and usefully consider what will increase or diminish the more material side.



of his happiness, or shortly, his material welfare or wealth, and it is quite convenient to have a separate department of science, called economics, to deal with the causes of the material welfare or wealth of human beings, considered both as a whole, and as individuals, and also in groups.

## CHAPTER V

### PRODUCTION

#### INTRODUCTION

Production, which is the subject of this chapter, is at once a business problem and a technical problem. The manufacturer who is offered a new kind of machine wants to know whether the machine will do the work that it is supposed to do. This sort of question we may call technical since it is usually in the field of engineering, or chemical, or agricultural, or some other science. The manufacturer wants to know also whether it will pay him to buy the machine and put it to work. This is a business problem. The farmer who is shown a new method wants to know whether the new method will work and whether it will pay. The student of economics is interested in both of these questions and in their relation to each other.

Professor Ely points out that the subject of production has in recent years been unduly neglected by economists. American economists have, however, in the last few years come to take a new interest in the subject as a result of the movement for the conservation of America's natural resources. More recently the war has brought out the importance of natural and human resources in the strength of a country and we may soon

see a revival of interest in the study of production throughout the world.

In no nation is there greater need to give attention to the problems of production than in China. The resources of the country need to be discovered and put to use. These resources are not only the coal and iron in the hills, but the qualities of the people as well. Professor Cannan says of India: "How ludicrous it would be to propose to bring the earnings of the average inhabitant of India up to those of the average American . . . by a change in methods of distribution!" He points out that it is plentiful production that is required. The same thing may be said of China.

This chapter ought to begin with a discussion of the qualities of the Chinese people that are a help and of those that are a hindrance to the material prosperity of the country. Probably no study of these qualities has ever been made, however. The student is urged to attempt to draw up a double list showing these two sets of qualities.

The natural resources of China are manifestly great, but few attempts have been made to measure them. It is plain that for purposes of comparison with other countries the population of China must be taken into consideration. This is seldom done. The first reading, (13) consists of a few statistics of unknown value that will be useful to the student. This is followed (14) by more detailed information about the mineral resources

that are of fundamental importance to modern industrial development. Then there follows a brief account (15) of an industry that has been successfully introduced from the West. The student may well compare modern flour milling in China with the account given by Mr. di Villa of the treatment of iron ore by the old traditional method.

Capital is a third factor in production that needs consideration. No more illuminating comparison can be found than that which is afforded by a study of the form which the wealth of Chinese officials took a century or more ago and the form which the wealth of a modern American business man takes. Ho Shen was the owner of a vast collection of consumer's goods of great gorgeousness and splendor. Mr. Carnegie owned but few such goods though he is reputed to have been a great lover of art. Mr. Carnegie owned producer's goods. The contrast is important for the student of economics in China. In the West the ownership of railways, mills and ships is evidence of wealth and not splendor of house and garden or of feast and ceremony.

Some comment might have been included, if it had been available, on the effects of the division of labor and of machine industry on the Chinese laborer and the Chinese family. Other subjects, such as the territorial division of labor, the effects of the *likin* system upon this territorial division, the remarkable dexterity and artistic skill of the Chinese workman in many fields, are merely mentioned. Some of them will be dealt with

later. They may suggest interesting fields of investigation and thought to the student.

### 13. Statistics of Production in China

The following statistical information about China and the organization of production in China is reprinted because it is the only information of the sort that has been found after some search. It will serve to indicate to the student the sort of information that ought to be available if comparisons between East and West are to be made and if reasonable conclusions about China are to be subjected to statistical verification.

The information, except where other sources are indicated, is from the Report of the Ministry of Agriculture and Commerce for the Fifth Year of the Republic.\*

This report gives no information as to the total area and population of China. For this information the student is referred to geographies and year books.

The total area of cultivated land is stated to be 1,472,193,844 mow. Taking 6 mow to the acre, we get 245,365,640 as the total number under cultivation. This differs considerably from two estimates in the "China Year Book" for 1919 (p. 434). The first of these is an estimate by Mr. George Jamieson in 1905 that the land under cultivation amounts to 650,000 square miles or 400,000,000 acres. Mr. Jamieson is said to have estimated that one-half of this land under cultivation is

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\*五年農商部統計表.

in the hands of peasant owners. The second estimate in the "China Year Book," from a source that is not given, is that the cultivated land amounts to 2,046,982,000 mow, which is 341,163,500 acres.

Other information from the Report of the Ministry of Agriculture and Commerce is as follows:

Land not under cultivation . . .	388,645,355 mow
Land rendered useless by floods and other circumstances . . .	113,944,555 mow
Forest Land . . . . .	389,261,043 mow

Information about the economic pursuits of China's population is to be found in the same report. The number of people engaged in agriculture is given as 49,028,864 families. The student is referred to Rockhill's *Inquiry into the Population of China*, printed in the chapter on Population, for estimates as to the number of individuals per family.

The number of factory workers is given as follows: Men workers 234,152; women workers 231,103; total 565,255.

In mining the total number of individuals is given as 417,659.

In commerce the total is stated to be 215,901; and in other industries 9,130,976.

No separate estimate of the number engaged in transportation is made in this statistical report. Mr. Roger D. Wolcott in his "Geography of the World" \*

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\*Commercial Press; Shanghai, 1920, p. 112.

estimates that one-fifth of China's man power is used for transportation. He puts the number engaged in transportation at 20,000,000. "This," says Mr. Wolcott, "is one of the chief causes of China's underproduction. In Western nations five per cent of the male labor is sufficient to handle the transportation."

A little reflection will bring out the fact that there are objections to accepting the figures as they have been given above. The students may be helped in developing a critical attitude toward statistics by making a comparison of these figures with similar ones for America such as are to be found in the chapter on Production in Ely's "Outlines of Economics."

#### 14. Coal, Iron and Antimony in China \*

*By E. M. Di Villa*

*Coal.* The annual production of coal in China is estimated at 20 million tons, which is one-twentieth of a ton per capita per annum. The consumption of coal in most countries where coal is available is about 3 tons per capita per annum, sixty times as much. When the demand for coal for household and industrial purposes is considered, and if we allow  $2\frac{1}{2}$  tons per capita for this account, and estimating the amount of coal available in China at 300,000,000 tons; on the figures above the consumption annually would be 1,000,000,000 tons,

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\*Selected passages from "The Examination of Mines in China" by E. M. Di Villa, Consulting Mining Engineer. Printed by the North China Daily Mail; Tientsin, 1919. Reprinted by permission.

the coal resources of China are seen to be sufficient to meet her own requirements for 300 years. It will readily be understood that coal is the most important mineral in the world. One-half of the cost of man's food is chargeable to the fuel used to cook it. The low per capita consumption of coal in China is due to the high cost of transportation and the low scale of living. Only the largest rivers are navigable, there are but few railways, and where these are the freight rates are exorbitant. Children and old men and women gather up every scrap of vegetable matter that might be utilized as a fuel. There is hardly one province in China where one may travel one hundred miles without encountering coal.

*Iron.* The two bases of industrial development are coal and iron. The security of the future of a country as a mineral producing nation rests upon its iron production. Lack of suitable transportation has retarded the development of iron mining even more than it has for coal. Iron is the second in importance of all the mineral resources of China, and in the native method of smelting iron ores such large quantities of coal are used that it is imperative to have the coal and iron ore in close proximity in order to allow the development of the industry. These conditions obtain in several of the provinces of China, notably in Shansi. For treatment by modern methods, a large quantity of ore, over 5 million tons, with a high iron content, over 50 per cent iron, and of uniform quality is necessary.



China has available about 1,000 million tons of iron ore, of which about 500 million tons are available for treatment by modern methods, and the balance by native methods on a smaller scale.

Iron ore occurs in China in two different modes: as contact deposits, generally associated with igneous rocks of the diorite type intruded into strata of Paleozoic age. The ore is usually found in the zone of contact metamorphism. The contact is often in limestone formation so usual in other countries. The second mode of occurrence is as bedded deposits of sedimentary origin.

In Manchuria the iron occurs as bedded deposits. There are many deposits but the most important are those at Anshan, whose output is about 150,000 tons of pig iron annually and at Penhsihu or Nanfen, where the output will be 100,000 tons of pig iron annually.\*

In Chihli province there occur many small deposits of the bedded type, but these have not attracted much attention. The only important deposit being worked is that at Lung Yen near Hsuanhua Fu, where the output will be about 150,000 tons of iron ore annually. At present it is proposed to ship this ore to Hankow for treatment, although the proprietors have been considering the installation of blast furnaces.

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\*The "Economic History of Manchuria," Seoul, Chosen, 1920, states that the present plan is to equip the Anshan works with a plant that will turn out 150,000 tons of pig iron annually. Only the first stage has been carried out. The production of pig iron for 1918 at Penhsihu is stated to be 45,700 tons.—Ed.

In Shansi the iron occurs as limonite and hematite in shales and sandstones. The modes of occurrence are very numerous. They are usually in masses of no great size, often in or near a disturbed zone of strata or in beds or flat veins of limited extent and from a few inches up to two or even three feet thick. These deposits, being only of limited extent and the quality not being uniform, are not suitable for treatment by a modern blast furnace on a large scale. The deposits bordering on Honan and in Honan province are of more uniform quality and in large quantity.

The Shansi ore is hand-sorted into grades and so sold to the smelting plants, where it is mixed with 50 per cent of its volume of coal, packed into cylindrical crucibles about 5 inches in diameter and nearly 4 feet long. From 250 to 300 of these are placed together upright in a rectangular furnace about 12 by 6 by 4 feet. The crucibles are set in place over a layer of broken crucibles, to secure air space, covered with a layer of coal and packed around with coal. The whole furnace is closed over and ignited, and allowed to burn for 3 days by natural draught. In removing the irregular bloom of iron many of the crucibles are broken. The small pieces of iron in the crucibles are sold to makers of cast iron, the coke is used in making more crucibles and the bloom is sold to manufacturers of wrought iron. The bloom contains very little carbon and is malleable. It is worked into wrought iron by heating in a wood fire and hammering until it is worked down into a

rectangular ingot. The small pieces of pig iron are mixed with coal, placed in crucibles 7 by 14 inches, about 70 at a time, in a small hand-blown furnace. When the iron is melted it is poured into another crucible and finally into molds. Remarkably thin castings may be made, as this iron usually contains about 4 to 7 per cent phosphorus, this phosphorus being taken up from the coal during reduction and resmelting. The trade is rapidly diminishing, imported utensils being of superior quality and lower price.

In Shantung province the deposits are usually of the contact type. The most important deposit at present being exploited is at Chinlingchen, which mines are being equipped and smelters built for an annual output of 100,000 tons of pig iron.

The geological conditions in Anhwei province are similar to those in Kiangsi and Hupeh. The most important localities are Taiping, Fangshan and Tungkuanshan, all of which contain iron ores of the contact type.

China has to-day only one modern steel works, the plant of the Han Yeh Ping Iron and Coal Company at Hanyang close to Hankow. The iron ores are mined at Tayeh, about 50 miles southwest of Hanyang, and coke is obtained from the company's colliery at Pinghsiang in Kiangsi, about 300 miles away. The Tayeh iron ores occur about 15 miles west of the Yangtse River, and lie along a contact between a crystalline limestone and an intrusive syenite. The ore is developed

over a length of about 12,000 feet. The contact runs approximately east and west and ore can be traced on each side for considerable distances. The ore body dips slightly to the north, being almost vertical and has a thickness of about 200 feet. The company also produced a considerable quantity of good manganese iron ore from Pinghsiang district in Kiangsi province, where there are some deposits containing about 20 per cent manganese. In Kiangsi, at Shengmenshan near Kiukiang, there is also a large deposit of the contact type which is being developed along modern lines.

Deposits of the contact type are also found at Fenghuangshan, near Nanking, and Likwoyi, and are widely distributed in other parts of the province. These, however, while presenting no insurmountable transportation difficulties, occur where suitable coal is not available.

The iron ores of Fukien province are of the contact type and are best seen in the Anchi district. The outcrops here cover about 18 square miles and are about 80 miles from the coast. About 80 li northwest of Hutao, at a locality known as Puntien, there is a deposit measuring approximately 100 million tons of ore.

The iron deposits at Juhsien in Hunan province and the deposits of Szechwan are generally of the sedimentary metamorphosed type.

The cost of production of iron ore at the Tayeh mines is about 85 cents per ton. The ore is at present shipped mostly to Japan for treatment, being sold at the

rate of Yen 4.50 per ton of ore. Although the ore costs only 85 cents per ton and the limestone about 65 cents per ton, coke 15 dollars and coal 8 dollars, yet it has been stated by one of the leading directors of the company that pig iron costs 60 dollars per ton to manufacture. The Lungyen Iron Mining Company propose at present to ship their iron ore from Hsuanhua Fu to Hankow for treatment there as, the Tayeh ore being sold to Japanese, the smelters at Hanyang are idle.

*Antimony.*—China is the largest producer of antimony in the world. The deposits occur under widely varying geological horizons. There is no antimony “belt.” In 1917 China exported in long tons: regulus 15,000, crude 20,000, and ore 4,000. The ore is shipped in boxes containing about 10 catties.

Hunan is the chief source of China's supply, the most important mine in view of both grade and output being the Hsikengshan, situated about 7 li east of Hsinhua Hsien on the Tzu River.

About 72 li south of Chanchi, on the River Tzu, are situated the Pansih mines. About 130 li east of Shenchow Fu and 9 li east of Kaitingyi, in the rugged country dividing the Tzu and Yuan rivers, are situated the Wushih mines.

Antimony may be marketed in three forms: as the hand picked ore extracted from the mine, as crude, and as regulus. Antimony regulus means the metal and is sometimes styled refined antimony.

Upon the subject of mining and mineral resources the student is referred to a paper by Mr. T. T. Read on the subject, which is quoted at length in the "China Year Book" for 1919 (pp. 63 ff.). The current number of this year book should always be consulted when statistical information is desired.

### 15. Flour Milling in China \*

*By Y. L. Chang*

Flour is used more extensively in the North than in the South of China. It is a staple food to the Northern Chinese as it is to the Western people, but of course the food is prepared in a different way. Primitive methods have been employed in making flour up to only about 20 years ago, when improved methods were introduced with the appearance of a number of flour mills, first in Shanghai and then in several other places. Although flour made in the old way is used to a large extent, the flour prepared in the mills is growing in popularity because of its better qualities. Flour turned out by the Shanghai mills alone is valued at fifty or sixty million dollars a year.

One noteworthy fact about this industry is that while the silk filatures and cotton mills in Shanghai are, in the majority of cases, owned and operated by foreigners, the flour milling industry is run almost exclusively by Chinese. Recently, however, this prestige is said to have been impaired by the appearance on the field of a Japanese flour mill.

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\* From an article in *Millard's Review*, Volume VII, No. 7.  
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According to the information furnished by the flour guild of Shanghai, there are now in China more than 36 flour mills, large and small, which are worthy of mention. They are found in the following places: Shanghai, Nantung, Wuhu, Hankow, Tsinang, Tsining, Tientsin, Peking, Wusih, Tsichow, Kaoyu, Chinkiang, and Tsinkiang. Seventeen of them are found in Shanghai, three in Hankow, five in Wusieh, and one or two in each of the remaining places. The majority of the mills in Shanghai are located in the direction of South Chapei or South Soochow and Markham Roads, are buildings three or four stories high, and are alongside creeks which facilitate the delivery of their products by boat. Should these seven mills in Shanghai run full 24 hours a day, 70,000 sacks of flour would be turned out in a single day. Most of these mills do not run at night unless market conditions require it; and when the demand for flour is scarce, these mills sometimes stop running for days until the market resumes its normal condition.

With the tremendous possibilities for growing wheat in China the mills certainly need have no fear about any shortage of supply. A conservative estimate puts the annual wheat yield of China at 26 million tons. Wheat is grown throughout all the provinces of China, but more is grown in the North, and Manchuria is said to have produced 10 million bushels a year. Mills outside of Shanghai draw their wheat supply mostly from their own localities. The Shanghai mills, however,

besides buying wheat locally import wheat from Anhui, Shantung, and other provinces.

Considering the gross output of flour from the mills, the amount of it exported has been insignificant. In 1914, according to the Customs returns, only Haikwan Tls. 339,839 worth of flour was exported. The export in 1910 of Haikwan Tls. 3,575,260 worth of flour seems to have been exceptional. Although there is an ample supply of flour at home, China has room for imports and in 1914 she imported from abroad flour to the value of Haikwan Tls. 9,016,589. With the teeming multitudes of people as consumers of flour, China ought to furnish a field for a much greater number of mills than already exist, and with good profit, too, should they be run properly.

Most of the flour exported from China went to Japan, for Japanese consumption and for re-export to other countries. Owing to the lack of shipping facilities the Chinese flour merchants have been unable to engage in the foreign export trade direct, and this trade has therefore fallen into Japanese hands. The Japanese order from the Chinese mills and resell to other nationals either in Shanghai itself or in Japan. In this way, not only the foreign export trade but even the local outport trade, especially to the Southern ports like Foochow, Canton, Swatow, etc., which are reached by Japanese steamer lines, has been taken over by the Japanese. Then, too, people who buy flour from the Japanese merchants are usually given one month in which to pay



their bills, whereas Chinese merchants are compelled by circumstances to demand cash for their sales.

In order to stimulate the progress of the flour industry and for the convenience of business men, an Exchange House has recently been established, where flour producers, merchants, speculators, and salesmen meet every day at three o'clock in the afternoon for making sales and purchases of wheat and flour. The assembling in one single place of these flour and wheat merchants enables one to make a number of transactions in the shortest possible time. The Exchange House is now situated on Foochow Road and has existed for five years. Only flour merchants of good standing are admitted here. The Exchange House is taken care of by a board of four directors elected by the representatives from each mill once in three months, and it is supported by the mill owners, flour merchants and salesmen. A larger house will soon be put up with more ample accommodations. Of the flour mills in Shanghai the Fu Feng mill may be chosen as a representative one, as it is the oldest and largest.

This mill was established in 1900 by a Mr. Sung, with an initial capital of about three hundred thousand dollars, and is now worth more than a million. Since it was the pioneer mill, it took some time before the merits of its products became known to the public. It was not until 4 or 5 years after its establishment that its business became so good that the annual profit almost equalled the amount of capital invested. As time goes

on, profits are getting less attractive, due to competition with new mills coming into operation from time to time.

This Fu Feng mill, like most other mills, is situated by the side of a creek, on Markham Road. The property covers 50 or 60 mow of land. The whole plant includes the mill, a power-house, a machine-shop, a heating-house, and a number of godowns. The mill contains two units of machines, of six rollers each, for grinding the wheat into flour. Two American millers were employed here. One was connected with the mill for 18 years and has only recently retired; and the other, who still superintends the mill, has been connected with it for about 12 years. Like the rest of the mill employees, these two Americans live in the mill compound; they are housed in a comfortable European style building two stories high. The services of these trained American millers are almost indispensable to the success of the mill, as the untrained handling of the flour machines would mean a loss of 3 or more per cent of flour. Considering the thousands of sacks turned out every month, the loss would be considerable.

The power-house is looked after by a Chinese mechanical engineer, American trained, a graduate of the Massachusetts Institute of Technology. The heating-house is used for drying wheat on rainy days, so as to keep the mill running even under unfavorable weather conditions.

A new feature of the mill is a bleaching machine, which is said to be capable of whitening the best grade of flour to a remarkable extent, with the aid of oxygen.

Two rows of barracks-like buildings two stories high are within the compound, in which the mill staff and other employees lodge. In the storerooms are thousands of sacks of flour in big piles. In the courtyard are a number of workmen busy removing the sacks to the boats which are waiting in the creek, ready to be paddled or towed to Shanghai or some other place. A few more buildings are under process of construction, which will be utilized as godowns. The mill produces four grades of flour, the quality being judged by fineness and color. The daily output of the mill averages about 5,000 sacks, besides a quantity of bran. The mill runs 24 hours per day, except on Mondays, when it closes for cleaning and repairs from 6 o'clock in the morning till 5 o'clock in the evening. The mill people claim their brand of flour to be superior to others, for the simple reason that it will keep better, being free from dampness. Prices for this flour are therefore somewhat higher than those for other brands. The flour turned out by this mill is shipped to the Northern ports, like Chefoo, Tientsin, Antung, and Shanhaikwan, and to the Southern ports, like Foochow, Amoy, Swatow, and Canton. Some of it goes to Japan.

This mill had originally three units of machines. On account of more favorable conditions in Shantung

one unit has been transferred to that province to equip a new mill which has just been started as a branch of the old one.

## 16. The Wealth of Ho Shen \*

*By Backhouse and Bland*

Ho Shen, the all-powerful minister of the Emperor Ch'ien Lung who died during the month of February, 1799, was put to death by the successor of Ch'ien Lung, the Emperor Chia Ch'ing. The great wealth which Ho Shen had amassed was confiscated and so a record exists of the chief items. This record is the report of "treasure-hunters." Of this report Bland and Backhouse say:—

Ho Shen's property was classified under 109 schedules, 26 of which showed a total value of 223 millions of taels. These figures, the result of an official valuation, were quoted in an Imperial decree, and may be regarded as approximately correct. His entire estate, roughly calculated on the same basis, must have been worth about 900 millions of taels.

The flower garden, presented to Ho Shen by Ch'ien Lung himself, was one of the wonders of the capital. It contained sixty-four pavilions, some of them decorated with Imperial yellow tiles, and had high towers at its four corners, after the design of the Palace precincts, which was undoubtedly inviting disaster. In these towers Ho Shen kept a considerable force of night watchmen under arms to protect his vast wealth; there were 420 altogether in the pleasure garden.

\*From Backhouse and Bland, "Annals and Memoirs of the Court of Peking," 1913; Chapter XIV; William Heinemann, London. Reprinted by permission.

According to the 26 schedules above mentioned, Ho Shen was the owner of 75 pawnshops, 13 curio-shops, two storehouses of white jade and two of silk. In his fur treasury there were 1,907 rare fox skins and 67,000 other pelts. He had a separate storehouse for sables and fur coats, in which were found 1,417 fine sable robes and over 4,000 other fur garments, together with large quantities of sable-lined boots and hats. His wood treasury was a building of 22 rooms, containing 8,640 pieces of the choicest woods. The contents of the pawnshops and curio-shops alone were valued at 60 millions of taels.

His private residences were furnished with a magnificence which the China of to-day knows only by tradition, the magnificence of art treasures accumulated through long centuries, but which, looted in successive rebellions or sold by their impoverished owners, have gradually found their way into the hands of foreigners and left the country forever. The list of curios found in Ho Shen's principal residence included among others the following objects:

11 bronze tripods of the Han dynasty.

18 jade tripods.

711 antique ink slabs (some of the Sung dynasty).

28 Imperial gongs of jade.

10 ancient Japanese swords.

38 European clocks, inlaid with gems.

140 gold and enamel watches.

226 pearl bracelets.

288 large rubies, 4,070 sapphires.

10 trees of coral, 3 feet 8 inches high.

22 statues, in white jade, representing the Goddess of Mercy, the Lohans, etc.

18 solid gold Lohans, 2 feet 4 inches high.

9,000 scepters—"Ju-i"—of solid gold, each weighing 48 ounces.

507 jade scepters, several of them engraved upon the handle with original verses by the Emperor Ch'ien Lung.

3,411 small jade sceptres.

500 pairs of chopsticks, ivory and gold.

A gold table service of 4,288 pieces; another similar service of silver.

99 large soup-bowls of topaz; 154 of jade.

124 wine beakers of white jade.

18 plates of jade and 18 of topaz, 40 inches in diameter.

2,390 snuff-bottles of jade, carnelian, and topaz.

1 solid rock of jade, carved and engraved with poems of the Ming Emperor Yung Lo and His Majesty Ch'ien Lung, about eight feet long. (This was looted from the Summer Palace in 1900 and is now in the Metropolitan Museum, New York).

Even the wash-basins, spittoons, and chamber utensils of the great man's house were of solid gold or jade—only a few were of silver. Of small screens he had 23 of solid gold, and 40 of gold and lacquer; 24 large lacquer screens; 144 couches decorated with gold

work and lacquer, inlaid with gems. Finally, in the treasury of this house alone, and in the garden *caches* they found gold bars to the value of 35 million taels, besides 28,000 articles of jewelry, large and small.

### 17. The Estate of Andrew Carnegie \*

The appraisal of the estate of Andrew Carnegie has been completed. It shows a gross value of \$26,293,024 and a net estate of \$23,247,161, which is even less than the estimate of Mr. Carnegie's fortune (between \$25,000,000 and \$30,000,000) made at the time of his death.

The huge fortune which he once possessed was reduced to these relatively small figures by the many public and private gifts Mr. Carnegie made during his life. The appraisal shows to what degree Mr. Carnegie succeeded in carrying out his purpose to dispose of the great bulk of his fortune before his death.

The appraisal was made in behalf of the Home Trust Company of Hoboken as executor and trustee under Andrew Carnegie's will. While it may be changed to a slight extent in the inheritance tax proceedings in New York, it is not believed that the ultimate figures will vary much from these.

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\* Adapted from a newspaper account of the will of Mr. Carnegie, which appeared in the *New York Times*. Mr. Carnegie was at one time one of the wealthiest men in the United States. He made his fortune in the development of the iron and steel industry of the country.

Mr. Carnegie's real estate in the vicinity of Pittsburgh is valued as follows: At Glencairn, \$179,687; Oakmont, \$157,580; Homestead, \$4,700. He had land in Canada and Minnesota valued at \$43,294.

The estimated value of Mr. Carnegie's real estate in New York is \$1,200,933, made up as follows: Residence at Fifth Avenue and Ninetieth Street, \$977,833; 155 West Fifty-sixth Street, \$40,000; 157 to 159 West Fifty-sixth Street, \$100,000; 53 to 55 East Ninetieth Street, \$66,800, and property at St. Andrew's Golf Club, Mount Hope, Westchester County, deeded to him in 1901, \$16,300.

*Mrs. Carnegie's Portion.* The total value of Mrs. Carnegie's share is estimated at \$11,338,847. This sum includes the New York real estate, a joint bank deposit of \$19,435, personal effects amounting to \$293,596, and a life interest in a trust fund established in 1911, which has a value of \$4,643,750, and which goes on the death of Mrs. Carnegie to her daughter, Mrs. Margaret Carnegie Miller, wife of Roswell Miller.

The schedules show that this trust fund was made up of securities valued at \$4,643,750, consisting of \$2,500,000 in United States Steel stock and \$2,143,750 in Pennsylvania Railroad shares. The Home Trust Company of Hoboken is trustee of the fund.

The schedules show that Mr. Carnegie had bank deposits of \$583,446 at the time of his death, a large part of which was in Pittsburgh banks.



Mr. Carnegie's stocks and bonds are listed at \$17,480,839, the bulk of which is in bonds, chief of which are United States Steel bonds. The largest bond holding other than steel is \$1,383,585 of the H. C. Frick Coke Company.

Mr. Carnegie's holding of Liberty bonds is confined to \$89,724 of the first loan and \$29,856 of the fourth. He also owned \$9,982 of Victory Loan certificates.

Only nineteen holdings of stocks are listed, and they do not include a single share of United States Steel. The largest two items are \$309,488 of common and \$545,500 of preferred stock of the Pittsburgh, Bessemer & Lake Erie Railroad. Only one holding, 1,520 shares of the Keokuk & Hamilton Bridge Company, is listed as worthless. One of the interesting items is 40 shares of stock in the United States Cremation Company, conducting a crematory at Fresh Pond, L. I., valued at \$320.

Mr. Carnegie is listed as the owner of only 100 shares of stock in Carnegie Hall, which are estimated at \$166,680. Concerning this item it is stated that Mr. Carnegie presented \$1,000,000 of the stock to the corporation in 1907. Before that gift was made the corporation had lost money, but the \$1,000,000 of stock was listed as an asset, which was subject to losses, adjustments, &c., amounting to \$677,452, leaving the corporation a surplus of \$322,547. Thereafter the corporation paid dividends which ranged from \$33,000 in 1909 to \$75,000 in 1914. The dividend in 1916 was

\$60,000, part of which was from profit and part from surplus. The average net earnings were \$27,721.

*Securities Held by Mr. Carnegie.* The following is a complete list of the securities:

## BONDS

<i>Number</i>	<i>Name</i>	<i>Value</i>
1	Alleghany Valley Ry. 4 p. c. ....	\$875
25	A., T. & S. F. 4½ p. c. ....	20,875
100	A., T. & S. F. 4 p. c. ....	79,125
100	Boston & Maine 4½ p. c. ....	85,000
850	Bessemer & Lake Erie 4½ p. c. ....	683,187
400	Carolina, C. & Ohio 5 p. c. ....	300,000
250	C., B. & Q. 4 p. c. ....	197,500
108	Chicago & Western 4 p. c. ....	65,880
100	C., M. & St. P. 4½ p. c. ....	76,000
100	C., M. & St. P. 4 p. c. ....	70,500
500	Cincinnati & Muskingum 4 p. c. ....	410,000
25	Cleveland & Marietta 4½ p. c. ....	23,000
20	Cleveland & Pittsburgh 2 p. c. ....	18,425
50	Central Railroad of N. J. 5 p. c. ....	50,000
150	Del. & Hudson Co. 4 p. c. ....	124,500
228	Duluth & Iron Range 5 p. c. ....	207,480
1,419	H. C. Frick Coke Co. 5 p. c. ....	383,525
25	Grand Rapids & Indiana 4½ p. c. ....	21,187
300	Illinois Steel Co. 4½ p. c. ....	255,000
250	Illinois Central 3½ p. c. ....	73,750
250	Jamestown, Franklin & Clearfield Ry. 4	.
	p. c. ....	198,750

<i>Number</i>	<i>Name</i>	<i>Value</i>
107	Kansas City Terminal Ry. 4 p. c. ....	\$79,581
304	Keokuk & Hamilton Bondholders Co. 6 p. c. ....	289,180
425	Lehigh & Lake Erie 4½ p. c. ....	384,625
100	Louisville & Nashville 4 p. c. ....	74,000
100	M., St. P. & S. S. M. 4 p. c. ....	83,250
250	M., St. P. & S. S. M. 4 p. c. ....	220,000
250	Mo., Kansas & Texas 4 p. c. ....	112,500
1,000	Jordan L. Mott Co. 5 p. c. ....	650,000
200	New York Central 4 p. c. ....	148,250
50	Nor. Pacific-Gt. Northern 4 p. c. ....	47,790
250	Nor. Pacific-Gt. Northern 4 p. c. ....	238,750
100	N. P.-Gt. Nor. (prior lien) 4 p. c. ....	76,250
250	Northern Pacific pr. lien 4 p. c. ....	196,250
27	Nor. Pacific refunding 4½ p. c. ....	22,140
63	Pennsylvania R. R. 4 p. c. ....	54,022
100	Pennsylvania R. R. 4½ p. c. ....	95,250
200	Pennsylvania R. R. 4 p. c. ....	170,500
100	Pennsylvania R. R. 4½ p. c. ....	82,500
25	Pitts., Bessemer & L. Erie 5 p. c. ....	24,000
25	P., Cinn., Chi. & St. L., 4½ p. c. ....	23,468
400	Ter. R. R. Assn., St. Louis 4 p. c. ....	288,000
12	Toledo, Wal. V. & Ohio 4½ p. c. ....	10,845
21	Toledo, Wal. V. & Ohio 4½ p. c. ....	18,978
900	Union Railway Co. 5 p. c. ....	723,375
100	Union Pacific 4 p. c. ....	84,625
90	First Liberty Loan 3½ p. c. ....	89,724
32	Fourth Liberty Loan 4½ p. c. ....	29,856

<i>Number</i>	<i>Name</i>	<i>Value</i>
10	Victory Loan 3½ p. c. ....	\$9,982
180	U. S. Steel sinking fund 5 p. c. ....	180,900
835	U. S. Steel 50-year reg. gold 5 p. c. ....	835,000
10	U. S. Steel 50-year gold 5 p. c. ....	10,000
70	U. S. Steel 50-year gold coupon 5 p. c. ....	70,000
725	U. S. Steel 50-year reg. gold 5 p. c. ....	725,000
47	U. S. Steel 50-year reg. gold 5 p. c. . ....	47,000
9	U. S. Steel 50-year gold coupon 5 p. c. ....	9,000
807	U. S. Steel 50-year reg. gold 5 p. c. ....	830,000
6	U. S. Steel 50-year reg. gold coupon 5 p. c. ....	6,000
830	U. S. Steel 50-year reg. gold coupon 5 p. c. ....	830,000
53	U. S. Steel 50-year reg. gold coupon 5 p. c. ....	53,000
1,105	U. S. Steel 50-year reg. gold 5 p. c. ....	1,105,000
4	\$5,000 U. S. Steel 50-year reg. gold 5 p. c. ....	20,000
8	U. S. Steel 50-year reg. gold 5 p. c. ....	8,000
1,660	U. S. Steel 50-year reg. gold 5 p. c. ....	1,660,000
32	U. S. Steel 50-year reg. gold 5 p. c. ....	32,000
25	U. S. Steel 50-year reg. gold 5 p. c. ....	25,000
43	U. S. Steel 50-year reg. gold 5 p. c. ....	43,000
250	Wheeling Terminal Ry. 4 p. c. ....	190,000
25	W. Va. & Pittsburgh 4 p. c. ....	17,750
25	West Penn. Ry. 4 p. c. ....	22,750
7	\$5,000 Ellendale (N. D.) revenue warrants	
4	p. c. ....	35,000

## STOCKS

50	Agricultural Imp. Assn. of N. Y. ....	\$50
125	Bellefield Co. of Pittsburgh, com. ....	312
125	Bellefield Co. of Pittsburgh, pf. ....	4,687

<i>Number</i>	<i>Name</i>	<i>Value</i>
100	Carnegie Hall.....	\$166,680
20,000	City & Suburban Homes Co. ....	100,000
2,000	Cleveland & Pittsburgh Ry. 7 % .....	130,000
390	Erie & Pittsburgh com. ....	21,060
965	Home Trust Co. of Hoboken .....	189,140
1,520	Keokuk & Hamilton Bridge Co. ....	.....
225	Louisville & Nashville com.....	24,975
35,200	Keokuk & Hamilton Bondholders Co.	88,000
2	Louisville Properties Co. ....	100
133	New York Transfer Co.....	4,655
325	Pennsylvania Railway .....	14,178
13,456	Pitts., Bessemer & Lake Erie com....	309,488
10,910	Pitts., Bessemer & L. Erie pf. ....	545,500
3,000	Pere Marquette pf.....	186,000
150	Rensselaer & Saratoga .....	17,325
40	U. S. Cremation Co. ....	320

*Personal Property Appraised.* The appraisal made by Samuel Marx and Eugene M. Homer of the personal property in the residence at Fifth Avenue and Ninetieth Street had a total value of \$90,545. One of the interesting disclosures is that, although Mr. Carnegie gave many millions of dollars for libraries, the books in his own library in his town house were appraised at only \$7,316, while he had books at Skibo valued at \$29,126.

The articles in the city residence are grouped as follows: Paintings, \$48,432; rugs, furniture, bric-a-brac, \$21,984; silverware, trophies, medals, \$8,496; jewelry, \$2,905; and wardrobe, \$1,417.

In Skibo Castle the furniture and personal effects have been valued at \$126,985; in the Inveran Hotel, Dornich, Scotland, at \$2,167, and in the Auchinduch House, Scotland, at \$1,411. The farm equipment, animals, &c., are valued at \$41,461, and Mr. Carnegie's yacht, Seabreeze, at \$1,898. The total value of the personal effects is \$293,596.

Varying estimates have been placed on autograph photographs and letters of notable persons in which Mr. Carnegie is said to have taken pride. An autographed photograph of the late Czar Nicholas, dated in 1910, is valued at only \$100, whereas one of the late Colonel Roosevelt, dated 1908, is appraised at \$150. A colored photograph of King Alfonso, autographed, is valued at \$150, while a photograph of the late King Edward is appraised at \$50, and one of Ex-President Loubet of France at only \$10.

The following values are placed on signed letters: King Alfonso, \$100; Emperor Franz Joseph, \$250, and King Edward, \$350.

*Paintings in Carnegie Home.* Mr. Carnegie's paintings in his library, billiard room and elsewhere in his home included the following:

The Carnegie Demonstration at Dunfermline.	
1881 (Blair) .....	\$500
Scenic (De Haes) .....	5,000
Landscape (Crane) .....	1,500
Grandpa (Procter) .....	1,200
Team of Horses (Inness) .....	350

Haystacks (Crane) . . . . .	\$500
Harvest Moon (Davis) . . . . .	600
Gleaners Homeward Bound (Thaugue) . . . . .	10,000
Music Lesson (Wiles) . . . . .	1,500
River Bank (Barnsley) . . . . .	350
Autumn Landscape (Ochtman) . . . . .	3,500
Mussel Gatherers (Coventry) . . . . .	1,200
Pastoral Scene (Wiggins) . . . . .	350
Wheat Field (Crane) . . . . .	750
Barn Scene (Howe) . . . . .	1,500
Ruins (Frasin) . . . . .	2,500
Roadside (East) . . . . .	1,800
Marine (Simmons) . . . . .	5,000
Robert Burns (after Raeburn) . . . . .	350
On the Banks of the River (Trodillebert) . . . . .	1,200
Scotch Mountain Scene (MacGeorge) . . . . .	1,500
Pastoral (Dupre) . . . . .	400
— (Costa) . . . . .	1,000
Lake in Autumn (McCord) . . . . .	275
Mountain Scene (Sonntag) . . . . .	350
Scenic (Coffin) . . . . .	350

Mr. Carnegie's jewelry, valued at \$2,905, consisted of the following: Pair gold cuff links, each containing four Oriental pearls, eight grains, \$800; three Oriental pearl studs, eight grains, \$600; same, six grains, \$450; mother of pearl and platinum dress suit set, \$250; gold open face watch and chain, \$150; Philippe & Co. gold open face watch, repeater, with calendar and moon phases, \$500, and two watches, \$30 and \$50 each.

Mr. Carnegie's wardrobe, valued at \$1,417, consisted of three blue suits, \$60; two white suits, \$40; fur lined coat, sable collar, \$550; nineteen suits, tweed and sack, frock and dress, \$350; six dressing gowns, \$120; six dozen shirts, silk, wool and linen, \$150; eight pairs shoes, \$16; six suits silk underwear, \$18; twelve suits woolen underwear, \$48, and socks, nightshirts, &c.. \$25.



## CHAPTER VI

### CONSUMPTION

#### INTRODUCTION

Consumption means the use of goods to bring about the final satisfaction of human wants. By most writers it is held to be the purpose and end of the whole economic system. The object of our economic activity is attained when we have put houses over peoples' heads, clothes upon their backs, and food upon their tables. There are some who do not agree with this viewpoint, but whether the student agrees or not, he will find that this viewpoint gives him a clear view of the economic process.

Since we use money incomes in most cases to buy the goods we consume, we may say that the study of consumption is the study of the use to which people finally put their incomes.

It is plain that in the ordinary use of the term, coal is consumed when cotton cloth is made or flour is ground. It is equally plain that to the economist this use of coal is a part of consumption. Such using up of materials and fuel has been given the name productive consumption to distinguish it from true consumption, which is frequently called final consumption.

The study of consumption involves some conclusions as to the meaning of the terms: necessity, luxury, and

waste. This is true because the distinction between the first two terms is frequently the basis of taxation and legislation and because there is much foolishness talked about the wasteful consumption of goods by the rich as an advantage to the poor.

The readings that follow deal with the subject of consumption. The first is reprinted to encourage such studies in other schools. The second is of much greater importance. It is probably a unique study and Professor Dittmer must be thanked for it. The student will do well to read his conclusions and compare his facts for China with those for the West. The student must ask himself the question: how many of China's difficulties are due to poverty, and must remember his answer when he comes to the various ways that are proposed to remedy this poverty. At the present time, however, he will do well to try to form some idea of the degree and extent of poverty in China and to try to set down the chief causes of it.

### 18. The Cost of Living at St. John's University, Shanghai\*

*By C. F. Remer*

The following shows the results of an investigation into the cost of living at St. John's similar to the investigation which was reported in the *Echo* for December, 1914.

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\* From the *St. John's Echo*, Shanghai, Vol. XXIX, No. 5, June, 1918.

Each student in the Sophomore class of the College of Arts was asked to make out a schedule showing his expenses during his Freshman year. Forty-eight students handed in papers, though no one was obliged to do so.

The items differ from the list reported in 1914 in this respect: item 4 of the 1914 schedule was omitted from the present one. Some allowance must be made for this in comparing the average expenditure per student in the two different years. It need not be allowed for completely, because the item was included by some students under the last item.

The total sum expended by the forty-eight students was \$21,956.05 and the average expenditure for each student was within a few cents of \$458.00. Calculated at this rate the St. John's students spend the considerable sum of \$222,000 in a year.

The following are the important facts about each item.

ITEM 1. *Tuition, food, and lodging.* That is, the amount paid to the authorities. The average for this item is \$203.91, and the item varied only in the case of those who held scholarships. The fact that it is above \$200 shows that the number of scholarships is not great. This sum, \$203.91, is 44.44% of the sum of the averages for the items (\$458.82) and the percentage of each student's expenditure which this item forms varies from 11.5% to 72.7%.

ITEM 2. *Clothing.* The average for this item is \$98.40 and the variation is from \$20.00 to \$360.00. This sum, \$98.40, is 25.45% of the sum of the averages for each item. The sum spent for clothing increases as we go from the smaller to the larger expenditures. After the smallest expenditures are past, the percentage spent for clothing is less variable than in the case of any other item. The conclusion seems justifiable that the kind of clothes a St. John's student wears is the best single indication of his total expenditure.

ITEM 3. *Books and other necessary supplies.* The average for this item is \$40.58. The item did not vary greatly and the average for this item formed 8.84% of the total of \$458.82. The percentage of expenditure for this item decreased and the actual amount increased, but not so rapidly as total expenditure.

ITEM 5. *Doctor's and hospital fees.* Fourteen of the forty-eight students report that they spent nothing under this head. The average sum so spent was \$8.84, which is 1.93% of \$458.82. One student spent as much as \$130.

ITEM 6. *Church, Christian Association and Club dues.* The average sum is \$7.74, which is 1.69% of \$458.82. The sum varied from \$1.00 to \$24.00.

ITEM 7. *Athletic Recreation.* The average expenditure is \$8.42, which is 1.84% of the total of \$458.82. Seven students report no expenditure under this heading, and the largest amount so spent was

\$20.00. The table below shows a decrease from three years ago.

ITEM 8. *Amusement, food purchased outside, and non-athletic recreation.* The average is \$47.07 and the variation is from \$2.30 to \$130.00. \$47.07 is 10.26% of \$458.82. The percentage of expenditure under this head varied from .5% to 26%. There is a considerable decrease from 1914 in average amount as well as in percentage. This decrease is difficult to explain.

ITEM 9. *Miscellaneous.* The average expenditure is \$43.86, which is 9.56% of \$458.82. This item included such expenditures as those for furniture, car-fare, ricksha fare, wedding presents, novels, etc.

The following table shows the results for 1914 and 1917 so that they may easily be compared.

Item	Average in Dollars		Percent of the Total	
	1914	1917	1914	1917
1	\$203.63	\$203.91	42.4	44.4
2	90.33	98.40	18.7	21.5
3	37.54	40.58	7.8	8.8
4	27.06		5.6	
5	8.69	8.84	1.7	1.9
6	6.25	7.74	1.4	1.7
7	10.04	8.42	2.2	1.8
8	61.09	47.07	12.7	10.3
9	35.73	43.86	7.4	9.6
Total	<u>\$480.36</u>	<u>\$458.82</u>		

## 19. An Estimate of the Standard of Living in China\*

By C. G. Dittmer

### I. PURPOSE

Two purposes are in mind in making the present study of family expenditures in a rural suburb of the city of Peking, China. The first is its bearing on other similar investigations made in this and in other countries and on the conclusions reached by Engel† in the fifties and modified by more recent students of the problem. The second is to present to the well-fed Occidental, who thinks he knows by experience what economic pressure is, a picture of real pressure as it exists in the Orient and an example of the limits to which a minimum plane of existence can be pushed.

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† This study of family expenditures and the application of Engel's Law in a little district in North China is but a fragment of a larger study of the Standard of Living in China on which the writer has worked for some three years at Tsing Hua College (the American Indemnity College) in Peking, China, and to complete which he is returning to that place this year. Being but a chapter from a larger work, some phases of the problem will seem inadequately treated but this is because they are being more fully discussed in other connections.

## II. SOURCE OF DATA

The data here presented are gathered from an intensive study of the incomes and expenditures of one hundred and ninety-five Chinese and Manchu families and are supplemented with a study of the expenditures of ninety-three employees at Tsing Hua College. The one hundred and ninety-five families are scattered at random over the entire district surrounding the college, which is located some five miles outside the west gate of the city of Peking. While many of them are farmers they are all villagers and come from more than a dozen different villages. The families of the employees studied are scattered over the entire province of Chihli, in which the city of Peking is located.

The investigation was made by the students of the college under the supervision of the Department of Social Science, a regular part of the course in Political Economy each year being a survey of this sort. It would be difficult to find a more carefully selected group of students than these who are gathered from every province in the country to be prepared for advanced study in America. These future leaders are keenly alert to China's social and economic problems and make not only careful and efficient but sympathetic investigators, to work with whom has been a joy. From this source and from the work of a paid investigator, the following and other varied material has been accumulating since 1914, when the task was first undertaken,

## III. LIMITATIONS

Only those who have lived in China can sympathize with the investigators in the difficulties encountered in making the present survey. Ignorance, superstition, fear, and even hate have worked against us. We have tried to use strictly scientific methods and to produce statistically correct results, but at best we can claim no more for our results than that they are estimates which we have so carefully studied, checked, and rechecked that we feel very sure of our ground. For this reason we are venturing to present them in statistical form, though statistical accuracy in the sense that we know it from the studies of Dr. Chapin and Mrs. More has been, from the nature of the case, impossible. We venture also to compare these results with those obtained in Europe and America because they so clearly show the same general tendencies in spite of the tremendous difference in the standards of living.

It must be definitely understood that this is an intensive study of a particular district rather than an extensive study of the whole country. We cannot even be sure that it is a fairly representative plot. It represents the actual living conditions in a little district of less than seven square miles to the northwest of the capital. It is called the First Division of the Western Suburb, and in these few square miles is supported a population of more than eight thousand people. There are eighteen villages, and more than three square miles



are occupied by the deserted gardens of princes and the famous, now ruined, palace of Emperor Chien Lung. This gives us a density of population scarcely equaled in many of our smaller American cities.

The individual character of the problem is complicated by the fact that the district is largely occupied by the now destitute Manchus who formerly lived here in opulence and ease on the tribute money exacted from the conquered Chinese. To-day the Chinese are masters, and all outside income has ceased with the exception of a small pension doled out to them by the deposed imperial family. Their condition in this period of transition and the provision which will have to be made for their future constitute one of China's foremost social problems.

Whether or not these data are typical of the Orient or even of China only time and other similar studies can tell. The Chinese associated with me in the work feel that they are very exceptional and that other parts of the country will make a better showing, but American friends from the south of China are under the impression that that section of the country will register an even severer economic and population pressure.

Therefore we are justified in taking this study only for what it is: a statistical estimate of the standard of living actually obtaining in a small district some five miles outside the capital of the Chinese Republic.

## IV. THE CLASSES REPRESENTED

Three distinct classes of people are studied in the following tables, only three of which can be combined and these not with entire satisfaction. Their value lies, however, not in our ability to sum them up in one table but the manner in which they complement each other. Each very definitely shows precisely the same main tendencies. As the studies of these classes were made independently and at different times, this constitutes the strongest single proof of their reliability.

The one hundred and ninety-five families in Tables II and III are divided into Chinese and Manchus. The different characteristics of the two peoples, the difference in their standards and morality, and the difference in their industry and source of income, make these two tables of value for purposes of comparison but difficult to combine. We find that within the same expenditure group the relative importance of the same item of expenditure varies greatly. The Chinese have no cases in the lowest expenditure group and the Manchus have no cases in the highest. For this reason it has seemed best to omit all data in these two groups, in the final table combining the entire one hundred and ninety-five cases.

The families represented have been taken at random from the whole district. They represent farmers, mechanics, tradesmen, day laborers, drivers, carpenters, barbers, and in fact all classes from beggars to gentle folk. No attempt has been made to choose one class or

one level. Any case presented, no matter what the class or status, has been retained if trustworthy.

The servants (Tables IV and V) represent a class by themselves and are of only supplementary value to the study. They have regular incomes and are furnished with housing and light and fuel. They can get good food (according to their standards) at a minimum cost, and they regularly send a large proportion of their incomes home to their families in case they depend on them for support. Such budgets cannot, of course, be compared with the above general family budgets.

Approximately one-third of the men represented in the families investigated are men with trades, one-third are farmers, one-sixth are small dealers, and one-sixth are common laborers.

In another study of the expenditures of college employees they were found to have an average income of \$93.71 of which an average amount of \$39.91 was sent home to their families. Of the families of servants 63 per cent earned by their own efforts less than the amount sent home to them and 31 per cent earned nothing at all.

## V. THE TABLES

Table I compares the distribution of Chinese and Manchu incomes. The median in each case falls in the \$90-\$109 group, but the Manchu has a larger number in the lower income groups and the Chinese in the higher.

A still more important fact is that 75 per cent of the income of the Manchu family is derived from the pension and the house which is given with it. Only 13 of the remaining 25 per cent comes directly from an

occupation. In the entire district where there are more Chinese than Manchus, two hundred and eighty-five Manchus are reported as without occupation as against ninety-one Chinese. The Manchu does not like to work. He has been known to pull up the brick tiles of his floor and sell them first. In one village of some

TABLE I. A COMPARISON OF THE INCOMES OF CHINESE  
AND MANCHU FAMILIES

Income in Chinese Dollars	One Hundred Chinese Families	Ninety-five Manchu Families
30- 49	0	9
50- 69	11	15
70- 89	14	21
90-109	26	24
110-129	15	12
130-149	13	11
150-169	8	3
170-189	2	0
190-209	5	0
210-229	2	0
230-249	3	0
250-269	1	0

forty families three-quarters of the homes were thrown open to the soldiers of the near-by barracks and a thriving business in prostitution was done. Children are an economic asset. This is a striking indication of the Manchu problem. The Chinese living and working in the same district have no pension and yet are in much better economic condition and live happier and more useful lives

A comparison of the distribution of expenditures (see Table II) shows the same tendency. For Chinese the median expenditure group is \$90-\$109 while for Manchus it is \$70-\$89.

Tables II and III show respectively the percentage and the average expenditures for various purposes of one hundred and ninety-five Chinese and Manchu families. For purposes of comparison the one hundred Chinese and ninety-five Manchu families are treated both separately and collectively. In addition the average income, average expenditure, average surplus and deficit, and average size of the family are shown for each group.

Correlation is according to expenditure rather than income. Seven \$20 classes are used, beginning at \$30 and ending with \$150 or over. Reducing this to American money the range would be from \$15 to \$75 and over. Investigations made in this country generally use a range of from \$200 to \$1,500. A comparison of the two shows a gulf which cannot be accounted for by the greater purchasing power of the dollar in China nor yet by the fact that most American investigations have been made among city dwellers while this is a rural community. Making allowance for every difference of this sort we still have a discrepancy for which it is possible to account only by the great difference in the standard of living.

In none of these tables has the attempt been made to reduce Chinese to American money owing to the constantly fluctuating exchange between the two

TABLE II. EXPENDITURE OF ONE HUNDRED AND NINETY-FIVE CHINESE AND MANCHU FAMILIES

Expenditure Groups by \$20 Classes	Size of Family	No. of Cases	Per cent Deficit or Surplus of Total Income	Per cent Total Expenditure of Total Income	Per cent of Total Expenditure			
					Food	Clothing and Fuel	Rent	Miscellaneous
ONE HUNDRED CHINESE FAMILIES								
\$30-\$49	...	...	...	...	...	...	...	...
50-69	2.5	11	...	100.0	76.9	5.1	7.6	1.4
70-89	3.2	14	2.3	97.7	80.3	4.3	5.6	1.9
90-109	4.2	32	2.2	97.8	78.0	5.9	5.8	2.2
110-129	4.3	12	1.7	98.3	72.7	9.0	7.5	3.1
130-149	4.5	14	3.8	96.2	72.4	8.9	7.3	4.1
150 Over	5.0	17	2.4	97.6	72.0	9.8	5.7	5.6
NINETY-FIVE MANCHU FAMILIES								
\$30-\$49	2.5	8	-4.5	104.5	82.0	.6	4.5	...
50-69	4.5	9	-3.7	103.7	82.0	1.3	4.1	1.3
70-89	4.4	30	-2.5	102.5	77.0	4.4	4.9	3.5
90-109	4.8	26	2.3	97.7	72.5	5.5	7.0	6.2
110-129	4.1	12	6.6	93.4	68.6	8.5	6.9	8.8
130-149	6.1	10	1.2	98.8	68.5	7.9	6.7	9.9
150 Over	...	...	...	...	...	...	...	...
TOTAL OF ONE HUNDRED AND NINETY-FIVE CHINESE AND MANCHU FAMILIES								
\$30-\$49	2.5	8	4.0	104.0	...	...	...	...
50-69	3.4	20	1.5	101.5	79.0	3.4	6.0	9.9
70-89	4.0	44	.8	100.8	77.9	4.4	5.1	9.4
90-109	4.4	58	2.8	97.2	75.2	5.6	6.3	8.4
110-129	4.2	24	4.0	96.0	70.5	8.7	7.2	7.5
130-149	5.1	24	3.0	97.0	70.8	8.5	7.0	7.1
150 Over	5.0	17	2.4	97.6	...	...	...	...

TABLE III. AVERAGE EXPENDITURES OF ONE HUNDRED AND NINETY-FIVE CHINESE AND MANCHU FAMILIES

Expenditure Groups by \$20 Classes	Average Total Income	Average Deficit or Surplus	Average Total Expenditure	Average Expenditure for				
				Food	Clothing	Light and Fuel	Rent	Miscellaneous
ONE HUNDRED CHINESE FAMILIES								
\$30-\$49	...	...	\$59.0	...	\$3.0	\$4.5	...	\$ .8
50-69	78.5	\$1.8	76.7	\$45.3	3.3	4.3	6.1	1.5
70-89	100.2	3.2	97.0	61.5	5.7	5.6	7.8	2.1
90-109	119.8	2.1	117.7	75.7	10.6	8.8	9.0	3.7
110-129	138.8	5.3	133.8	85.6	12.0	9.8	9.8	5.5
130-149	188.8	4.5	184.1	96.9	18.0	10.5	12.4	10.2
150 Over	...	...	...	132.4	...	...	...	...
NINETY-FIVE MANCHU FAMILIES								
\$30-\$49	\$40.1	-\$1.6	\$41.8	\$34.2	\$ .3	\$1.9	\$5.4	\$ .8
50-69	57.6	-2.2	59.8	49.1	.8	2.4	6.6	2.7
70-89	74.7	-1.8	76.6	58.9	3.4	3.8	7.8	6.1
90-109	101.5	2.4	99.1	71.8	5.5	6.9	8.7	10.4
110-129	126.2	8.0	118.2	81.1	10.0	8.1	8.5	13.6
130-149	139.5	1.7	137.8	94.5	10.9	9.2	9.6	...
150 Over	...	...	...	...	...	...	...	...
TOTAL OF ONE HUNDRED AND NINETY-FIVE CHINESE AND MANCHU FAMILIES								
\$30-\$49	\$40.1	-\$1.6	\$41.8	...	...	...	...	\$ .8
50-69	58.5	-.9	59.4	\$47.0	\$2.0	\$3.6	\$5.9	2.3
70-89	76.0	-.6	76.6	59.7	3.4	3.9	7.2	3.9
90-109	100.8	2.8	97.9	74.0	5.5	6.2	8.2	7.0
110-129	123.0	5.0	118.0	83.3	10.3	8.5	8.8	8.9
130-149	139.7	4.2	135.5	95.5	11.5	9.5	9.7	...
150 Over	188.8	4.5	184.1	...	...	...	...	...

countries and the difference between the real value of the two dollars. The writer has seen the American dollar fluctuate more than one hundred points in value in the space of a single year in China. For the five years ending January, 1916, the average value of the American dollar in Chinese dollars was a fraction less than \$2.25. In general, however, where the actual exchange of money is not concerned, it is customary to figure on an exchange of two for one.

Expenditures are classified under the usual five heads—food, clothing, light and fuel, rent, and miscellaneous. Under the first four are included all subsistence wants while under the last must be included that indefinite, always growing, ever insistent class of needs amongst which are education, books, travel, recreation, social obligations, medical attendance, insurance, spending money, et cetera. It is a nice little problem to estimate what per cent of the total expenditure can be devoted to each of the above when less than a

TABLE IV. EXPENDITURES OF NINETY-THREE SERVANTS

Expenditure Groups by \$20 Classes	No. of Cases	% of Total sent Home	% of Total spent on Self	Per cent of Total Expenditures on Self for			
				Food	Clothing	Other Necessities	Miscellaneous
\$30-\$49	7	4.5	95.5	84.7	13.2	1.4	.7
50- 69	13	25.0	75.0	76.0	19.8	2.0	1.2
70- 89	12	36.0	64.0	70.0	22.2	3.0	2.5
90-109	51	47.0	53.0	69.5	18.5	8.7	3.6
110-129	10	53.5	46.5	63.0	21.0	10.8	6.1
130-149	...	...	...	...	...	...	...
150 Over	...	...	...	...	...	...	...



dollar a year is available for miscellaneous expenditures. The results here shown make it evident that the standard of living is to be measured not by the per cent of the income spent for food but by the per cent remaining for these miscellaneous purposes after the mere subsistence wants have been satisfied. In neither Mrs. More's nor Dr. Chapin's studies do we find the per cent of expenditure for food decreasing regularly as the income increases. The irregularity in the case of Dr. Chapin's study is hard to explain. In neither of the above two cases would it be possible to use this per cent as an index.

In Tables IV and V the expenditures for servants are presented in the same general manner as for Chinese and Manchu families in Tables II and III. Owing to the different conditions obtaining, as indicated above, the purposes of expenditure are slightly different. The general expenditure is divided into the amount sent home and the amount spent on self. Expenditures on

TABLE V. AVERAGE EXPENDITURES OF NINETY-THREE SERVANTS

Expenditure Groups by \$20 Classes	Average Total Income	Average Amount sent Home	Spent on Self				
			Total	Food	Clothing	Other Necessities	Miscellaneous
\$30-\$49	\$44.5	\$ .3	\$42.5	\$36.0	\$5.5	\$ .6	\$ .3
50- 69	61.0	15.5	45.5	35.0	9.0	.9	.5
70- 89	81.0	29.0	52.0	36.5	11.6	1.6	1.3
90-109	99.0	46.0	53.0	36.7	9.8	4.6	1.9
110-129	117.5	63.3	54.2	34.0	11.2	5.5	3.3
130-149	...	...	...	...	...	...	...
150 Over	...	...	...	...	...	...	...

self are divided into food, clothing, other necessities, and luxuries. The same expenditure groups are used.

## VI. ANALYSIS OF TABLES

*Surplus and deficit.* All Manchu families show a deficit till an expenditure of \$90 is reached. The record for Chinese is much better, as in even the lowest expenditure group there is no deficit and at \$70 they begin to save. Deficits go as high as 4 per cent and, omitting one group which is very exceptional, the surplus attains the same per cent.

*Food.* The average expenditure for food increases as the general expenditure increases, but not proportionally, for the per cent decreases. This is regularly demonstrated by the Manchus and Chinese, separately and together, and by the servants. The per cent expended for food varies from a maximum of 83 per cent for Manchus in the lowest expenditure group to a minimum of 68 per cent for the same people in their highest expenditure group. The minimum average expenditure is \$34.20 per year for an average family of 2.5 Manchus, and the maximum is an average of \$132.40 for a family of 4.5 Chinese. The average expenditure for food for servants remains in all groups very close to \$36, which is the regular cost of board for servants at the school.

The interesting thing to note here is that we have a wider range of variation among the Manchus than

among the Chinese in the per cent spent on food. The reason is that the thrifty Chinese are less willing to cut down on food for the sake of luxuries than are their former masters, the Manchus. This tendency we shall see again.

*Clothing.* In every case the average amount and the per cent spent for clothing show a marked tendency to increase. The per cent spent on clothing varies from .7 per cent to 9.8 per cent and the average amount varies from \$.30 to \$18. The Chinese spend both a larger per cent and a larger average amount than do the Manchus on this item. Here is another place where the Manchu can cut down in order to get the luxuries he once was used to. The servants, due to the character of their work, spend a relatively large amount on clothing.

*Light and fuel.* The average amount spent on light and fuel shows a marked tendency to increase and the per cent shows a slight tendency in the same direction. In other investigations the per cent for this item either decreases or remains the same. The reason for this difference lies in the fact that, until an expenditure of \$90 is reached for both Chinese and Manchus, the family cannot spend a sufficient amount for this purpose and has to make up by gathering fuel from the fields. Six dollars is the minimum amount with which a family can do, and to spend more than \$10 means luxury. A quarter of the Chinese and nearly half of

the Manchus spend less than \$5 for light and fuel. For servants these things are furnished.

*Rent.* Rent in this district is comparatively low. It ranges from \$5 to \$12 per year, and amounts to from 5 per cent to 12 per cent of the total expenditure. The best house in the district can be rented for \$15 and would be fairly comfortable as a shelter for stock.

Servants are housed at the college.

*Miscellaneous.* The average amount available for miscellaneous expenditures ranges from nothing for Manchu families of the lowest class to a maximum of \$13.60 for the same people in their highest class. The range for Chinese is much more modest. Their lowest class has \$1.40 and their highest has \$5.60. We have already seen the reason for this lies in the willingness of the Manchu to cut down on necessities in order to save for this item.

Luxuries combined with "other necessities" for servants show them to spend a larger proportion of their incomes for this purpose than the above families do. Probably coming in contact with a higher standard of living in their work is responsible for this.

*Average amount sent home.* Among the servants the big item is the amount sent home to the families dependent on them. The average amount spent on self varies from \$42.50 to \$55, but the average amount sent home varies from less than \$1.00 to \$63.30. Living among them has been largely standardized, which accounts for this large surplus.

## VII. GENERAL CONCLUSIONS

Four general conclusions may be reached from the study of the foregoing tables.

1. As the general expenditure increases, the average size of the family is larger.

2. As the general expenditure increases, the average amount spent for food and for rent increases but the per cent shows a regular and definite tendency to decrease.

3. As the general expenditure increases, both the average amount and the per cent spent for clothing and miscellaneous items show a regular and a definite tendency to increase.

4. As the general expenditure increases, the average amount spent for light and fuel increases perceptibly but the per cent shows only a slight tendency in the same direction.

The above conclusions vary from those reached by Engel in the same manner that the American investigations have varied. They hold for food and luxuries (miscellaneous) but not for the rest. As in America, the per cent spent for clothing increases and the per cent spent for rent decreases. In China, however, the per cent spent on light and fuel shows a slight tendency to increase while in America it decreases. This is explained by the fact already mentioned that many families in the survey gather from the fields half the fuel they consume, and some of them, most of it. This

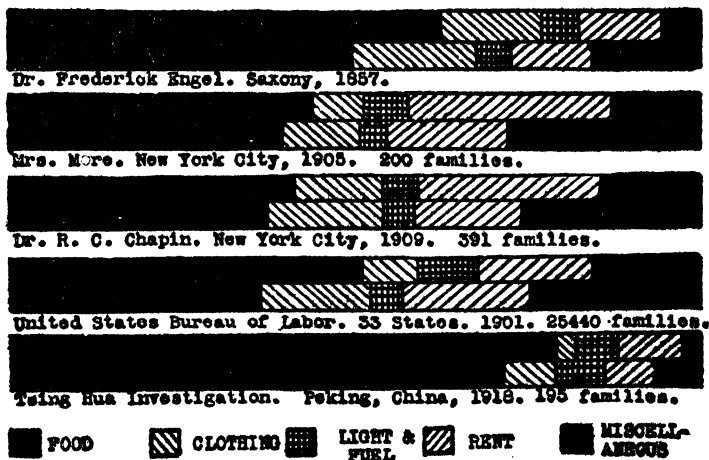
accounts for the rapid increase in the average expenditure for light and fuel as the family income becomes large enough to relieve the family of this burden.

### VIII. COMPARISON WITH OTHER INVESTIGATIONS

Figure I is a comparison of our investigation with four other investigations of the subject. The purpose of the comparison is to show the range of variation within and between them. In each case the lowest and the highest income groups are contrasted. The three American studies do not vary greatly. In general, the

FIGURE I

A COMPARISON OF THE EXTREMES OF VARIATION IN THE PERCENTAGE OF EXPENDITURE FOR VARIOUS PURPOSES BETWEEN THE HIGHEST AND THE LOWEST INCOME GROUPS IN FIVE INVESTIGATIONS



## THE EXPENDITURES IN FIVE INVESTIGATIONS

Investigation	Income Groups A—Lowest B—Highest	Per cent of Total Expenditure				
		Food	Cloth- ing	Light and Fuel	Rent	Miscel- laneous
Engel .....	A \$225- 300	62.0	16 0	5.0	12.0	5.0
	B 750-1000	50.0	18.0	5.0	12.0	15.0
Mrs. More.....	A 200- 400	44.2	7.3	6.5	30.5	11.5
	B 1200-1500	39.5	11.3	4.5	18.0	26.7
Dr. Chapin .....	A 400- 499	40.8	13.0	5.6	26.8	14.8
	B 1500-1599	36.8	16.8	4.1	16.3	26.0
U. S. B. of L. ...	A Under 200	50.9	8.7	7.9	16.9	15.6
	B 1200 Over	36.5	15.7	5.0	17.4	25.4
Tsing Hua.....	A 30- 49(a)	79.0	3.4	6.0	9.9	1.3
	B 130- 149	70.8	8.5	7.0	7.1	6.6

(a) Chinese dollars. Exchange value fluctuates greatly but is normally about \$.50.

three belong to the same class and show the same general characteristics. Engel's study varies mainly in that a larger per cent is spent for food and a smaller per cent remains for miscellaneous expenditures. A similar study made in Massachusetts in 1885 shows the same characteristic, with 64 per cent spent for food in the lowest income group. If it were possible to push this investigation far enough back we should find the per cent spent on necessities constantly increasing and the per cent left as a margin for luxuries constantly decreasing.

Now compare the Tsing Hua results with those obtaining above. In every case the best record obtained for China is poorer than the poorest record in the other four, even Engel's study made in Prussia more than fifty years ago and the one made here in 1885. The

per cent spent on food alone is almost as much as the entire per cent spent on all existence wants in the American cases. The maximum per cent remaining for miscellaneous expenditures in China is 6.6 per cent, while in America the lowest is nearly twice that amount. Many of the families in our investigation reported that the mere buying of the most pressing necessities of life thrust them into debt.

The comparison in this figure shows vividly what is meant by a minimum plane of existence.

### IX. HOW IT IS DONE

In America a family which spends half its income on food and has less than one-fifth of it left for miscellaneous expenditures is thought to be in a very bad way, but this is better than the best that our present study can show. In the investigation we have individual cases where as high as 90 per cent is spent for food and a larger number in which tea and meat, if they could be afforded at all, would come under the head of luxuries. How does a family of 2.5 feed itself on even 83 per cent of an income of \$40 per year? The answer is that two meals of corn bread and salted turnips per day with plenty of good hot water to help it down would cost very little in America and costs much less than half as much in China.

The same family spends the sum of thirty cents per year on clothing. Of course this is fictitious accuracy, but it shows very well the condition to which they are



reduced. The acquisition of clothing is purely a matter of happy accident. In summer their clothing, though dirty, is comfortable, for it is well ventilated. In winter they suffer. Cotton is worn, single in summer and thickly padded in winter. Plenty of it is comfortably warm, but people of the lowest groups have but a single suit, the cotton wadding being taken out when it is warm and replaced when the cold weather comes on.

If it takes \$6 to keep a family from freezing to death in this cold North China climate, and if half the families spend less, where does fuel come from? This is answered any day during the fall and winter by the swarms of old women and children who infest the fields and highway picking up sticks, throwing clubs into the branches to break off twigs, gathering stubble from the fields, and even collecting the dry grass and leaves with a bamboo rake and basket. We have a saying in China that the whole country is raked with a fine toothed comb each year.

How can rents be so low? What sort of a house can one rent for \$10 per year? Well, dirt floors are not expensive, thatch lasts a long time and, even if it does leak, rain does not always fall, and modern sanitary conveniences such as a screen of reeds, a hole in the ground, and an open gutter running to a hole in the wall and emptying into the road are not hard to install.

Now what does this family do for education, books, travel, recreation, social obligations, et cetera? What insurance do they carry and how much is laid aside for



the rainy day? What would happen if sickness came? These questions are unanswered for us, as they are for the native of this district. If sickness comes it means suffering and perhaps death. If the rainy day comes it means suffering and perhaps the same end. They can have all the luxuries, advantages, and insurance that from nothing to \$15 per year can offer.

#### X. WHAT IS THE COST?

From the study of a large number of cases it appears that a family of five can live in comparative comfort (according to local standards) on \$100 per year. This means that they can have enough food, though simple and poor, live in a house which will at least shelter them from the elements, have at least two suits of clothes, have enough fuel so that they do not have to go out and gather it, and have five dollars left over for miscellaneous expenses which will give them meat on feast days and tea quite often, almost every week; while if there is no sickness, they may even make a trip to the temple fair back in the mountains.

What a picture of the struggle for existence! These people do get along, and the above family is happy and will consider itself fortunate to come out so well; but what is the price they pay? Among people of this class life presents such a hard front that the struggle for existence cripples intellectual and spiritual growth even as it does physical development. Healthy, virile amusements as the Westerner knows them are conspicuous for

their absence. Efficiency and intellectual alertness are at the minimum and nervous reactions are slow. There is no surplus of energy because it is all used up in meeting the hard conditions which make mere survival a difficult matter. Ignorance, over-reproduction, congestion, low position of woman, lack of sanitation, epidemics, and a tremendous loss of "potential ability"—this is the price they pay.

## CHAPTER VII

### VALUE AND PRICE

#### INTRODUCTION

The explanation of prices and price changes has been said to constitute the field of economic investigation. Economics has, of course, a wider field; but such a statement brings out the fact that the explanation of price and value is one of the chief problems of economic theory. Value has been the subject of discussion among economists since the beginnings of the science and it is to-day the field of vigorous debate.

The student ought not to become involved in a discussion of value and in an attempt to understand the many special terms that are used in such discussions, until he has grasped the problem and knows what it is that needs explanation. He can do this by studying one explanation which is put into simple words. It is with this in mind that the extract from Professor Carver's book has been selected for this chapter.

When Professor Carver's statement has been studied the student may well proceed to the fuller discussion of the subject to be found in Ely's "Outlines of Economics" or in Taussig's "Principles of Economics."

One of Professor Ely's statements about the subject of *value* is of such importance that it may well be repeated here. Professor Ely points out that the principle of supply and demand is an illuminating way of stating the problem of value rather than a solution of the problem. The student who bears this in mind will be on his guard against the false simplicity that popular writers and after-dinner speakers give to the problem of value when they say, as they frequently do, that it is fully explained by the great law of supply and demand. The student will find, however, that supply and demand provide the most useful basis of classification of the many forces and influences that determine price.

The reading of this chapter may well be supplemented by a discussion of actual prices in a community with which the student is familiar and of changes in price that are matters of common knowledge. The influences that bear upon value and price may be listed under demand and under supply. Such an exercise will make fuller discussions of the subject much clearer.

But the student must not lose himself in the discussion at this time, for he will discover that the subject of value must be given careful attention again, when the principles and problems of distribution are being dealt with.

## 20. Value \*

*By T. N. Carver*

The following excerpt is but a small section of a chapter in the book named below. It is given because it expresses the author's principles in very simple language. The reader who wishes to pursue this subject further should, in justice to Professor Carver, consult his larger works.

The problems of wages, of rent, and of interest are special phases of the general problem of exchange value and price. A concrete individual article, such as an egg, a loaf of bread, a horse, etc., has value [exchange value] only because it is wanted; and the more it is wanted in comparison with other things, the more value it will have; that is, the more of these other things will be given in exchange for it. Other things equal, if there are available a great many other eggs besides the one in question, that one will be less wanted than it would be if eggs were scarce. The same proposition might be repeated with respect to the loaf of bread, the horse, or any other article of exchange which one might have in mind. This is the simple mental fact which lies back of the great and well-known law of demand and supply.

In order to understand fully the reason for this fact we must recall the distinction made in a previous chapter between consumers' and producers' goods.

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\* From Professor Carver's, "Principles of Rural Economics." Ginn & Co., New York, 1911.

Consumers' goods, it will be remembered, are goods which are wanted for their own sake and not for the sake of some other goods which they help us to get. They include such things as food, wearing apparel, household furniture, etc. Producers' goods, on the other hand, are not wanted for their own sake, but for the sake of other things which they help us to get. They include such things as plows, harrows, reapers, fertilizers, etc.

With respect to consumers' goods, the reason why each unit of a large supply of a given commodity is, other things equal, less wanted than each unit of a small supply is found in a rather simple physiological fact known as the satiability of wants; that is to say, every want is satiable, and the more nearly it reaches the point of satiety the less intense it becomes. Stated in language so simple and obvious as to appear almost ridiculous, this simply means that if you give a man all he wants of a certain thing, he will not want any more; and the more nearly he comes to having all he wants, the less intense will be his desire for more. This applies to every person in the community. When there is a large supply of a given article of consumption, the desires of its consumers in general are more nearly satisfied than when there is a small supply. Consequently the desire for each unit becomes less intense, that is, the average consumer does not want more than he has with quite the same intensity that he would if he didn't have so much already. Simple as this may



seem, it is the sum and substance of the whole theory of value, in so far as it applies to consumers' goods. It is the basis of all our moral and æsthetic values.

With respect to producers' goods, or productive agents, however, the case is not quite so simple. Since the desire for a productive agent is based on the desire for the thing which it helps to produce, it would follow that if the thing produced becomes more abundant and the desire for it less intense, then the desire for the thing which produced it would also become correspondingly less intense. Since one result of an increase of the supply of a productive agent would be to increase the supply of its products, we have one very good explanation of the reason why the desire for each unit of it diminishes as the supply increases. But there is another reason more important than that one, which may be found in the law of diminishing returns. Under this law, if the supply of one factor of production increases relatively to the other factors, each unit of this one factor becomes less productive.

## CHAPTER VIII

### MONOPOLY

#### INTRODUCTION

The study of the subject of monopoly brings out certain economic principles and shows the relation of these economic principles to the practical problems of political and business life. The theory of monopoly price which is dealt with in the selection by Professor Fisher is important in itself and it enables the student to understand the subject of value and price more clearly. He is able to compare the explanation of the determination of price under conditions of competition with that under the absence of competition.

But monopoly is important for the further reason that when it appears it usually requires action by the community or the government. This is well brought out by Professor Clay. His conclusions will help to explain the government ownership of railways in China. Another application is to the problem of the control of municipal utilities. In many Chinese cities there has been difficulty in securing good service from the corporation furnishing electric light and power. This has sometimes led to the organization of a new corporation in the hope that competition would bring about the desired service. The experience in Western countries,

however, has been that such municipal utilities should be regarded as monopolies. Good service is to be secured by their control and not by the attempt to bring in competition. Competition in such cases is hard to maintain, and, when it can be maintained, brings with it evils that are frequently as great as those it is supposed to remedy.

Monopoly brings to the mind of the Chinese student another, and quite different, kind of monopoly as well as the sort that has just been considered. This monopoly is of the kind called fiscal monopoly. It is a monopoly undertaken by the government for the purpose of procuring revenue or for the purpose of controlling or regulating a particular trade or industry. The post office, in most countries, is an example. Others are the tobacco monopoly of the French and Japanese governments, the camphor monopoly of Japan and the salt monopoly in various Eastern countries. Because of the importance of fiscal monopolies in China an account of the Salt Administration is given. It is probable that proposals will be made in the near future to add to the number of fiscal monopolies in China. The student ought to have information which will enable him to form an opinion as to the desirability of such extension.

## 21. Monopoly Price\*

*By Irving Fisher*

The supreme principle which guides economic action is the principle of maximum gain. This principle applies both to competition and monopoly, but its application is different in the two cases. In the case of competition the price set by a man's competitors is an important element which must be reckoned with by that man, while in the case of monopoly he has no such element to reckon with. In fact, monopoly is best defined as *absence of competition*.

In explaining the principle on which monopoly price is fixed, we shall first assume that competition is entirely absent, there being no fear even that high prices will lead to competition in the future.

Under these circumstances the monopolist will fix his price with an eye to the expected effect on demand. He will charge "what the traffic will bear," *i.e.*, will put up his price to the point which will give him a maximum profit. The higher the price, the larger the profit per unit sold. But if he makes his price too high, he kills the sales. If, on the other hand, he makes it too low, he kills his profit per unit. By trial and error or by exercise of his best judgment, he steers

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\*From Chapter XVII, *The Influences Behind Supply*, of Irving Fisher's *Elementary Principles of Economics*, The Macmillan Company, New York, 1916. Reprinted by permission.

a middle course, and selects the price which he thinks will render his profit a maximum.

In general, the price under monopoly will be higher than under competition, but this will not always be the case if, as may happen, the costs under monopoly are less than the costs under competition. In some cases monopoly may result in lowering costs so much that the greatest profit is secured by setting the price lower than under competition. Such economies in cost come from getting rid of duplications in plant, management, and advertising, and by having the advantages in general of large scale production.

When monopoly price exceeds price under competition, there is usually danger that competition will thereby be invited. Practically, such danger is seldom absent. Competition which is feared, but not in actual existence, is called potential competition. This potential competition has an effect similar to real competition, so that under monopoly the price is usually not quite "*all the traffic will bear*," but something between that and the price that would result from actual competition. In general, prices are seldom determined under conditions either of perfect monopoly or perfect competition. There is usually a partial monopoly, or, what is the same thing, imperfect competition.

There are many and obvious evils in monopoly. Some monopolies originate in a deliberate plan to do evil, in a "conspiracy" to raise prices and without any excuse from cutthroat competition. But the evils of

high prices are among the least of the evils of monopoly. There are also the evils involved in the ruthless process of crushing competitors by first lowering prices and then raising them; there are the evils of discrimination, or charging different prices to different persons or localities. There are also the dangers of political corruption and control. The reader will have an opportunity in other books to study these evils and the proposed remedies; we cannot properly discuss them here. We may, however, take space to warn him to avoid the common but false conclusion that all monopolies are evil. In fact, a chief lesson from this chapter is that, on the contrary, competition itself is sometimes an evil, *i.e.*, when it is of the cutthroat kind, for which some form of monopoly is the only remedy. When any business involves a large sunk cost or has a descending cost curve, and therefore a descending supply curve, competition becomes of the cutthroat kind. Even if we deny our sympathy to those producers who lose by such competition, we must not fail to note that in the end consumers will lose also. The reason is that when cutthroat competition is feared, producers will avoid sinking capital in the enterprise. It is largely in recognition of this fact and in order to encourage such investment that patents and copyrights are given. These are monopolies expressly fostered by the government. Herbert Spencer once invented an excellent invalid chair, and, thinking to give it to the world without recompense to himself, did not patent it. The

result was that no manufacture dared risk undertaking its manufacture. Each knew that, if it succeeded, competitors would spring up and rob him of most or all of his profits, while, on the other hand, it might fail. Enforced railway competition has sometimes resulted in killing railway enterprise. The rise of trusts, pools, and rate agreements is largely due to the necessity of protection from competition, precisely analogous to the protection given by patents and copyrights.

Combinations are largely the result of the two conditions we have been considering—the fact that the supply curve descends, and the fact that there is large invested capital. The anti-trust movement, in so far as it aims to compel competition, does not take these facts into account; nor does it understand the necessities which have led to monopoly. So considerable are the lines of business in which either there is a large sunk capital or a descending supply curve, that if we do not allow some form of trade agreements many kinds of trade are to-day practically impossible. Restrictive measures should be directed toward the *control* of monopolies and combinations, not to the restoration of competition. At the present time the general tendency is toward those forms of production in which cutthroat competition figures, and in which monopoly will ultimately rule. It must not be supposed, however, that all or even most of productive enterprise is of this character. There is an immense field in which the older form of competition still holds sway; that is, in which marginal cost increases

with increased production so that the supply curve is of the ascending, not the descending, type. In such cases competition is still the "life of trade" and affords a safeguard for the consumer against exorbitant prices. Such competition needs no regulation, and in general is better off without it.

## 22. Monopoly and Combination\*

*By Henry Clay*

IN CERTAIN INDUSTRIES ECONOMY AND EFFICIENCY CAN  
BE SECURED ONLY BY MONOPOLISTIC CONTROL

*Definition of Monopoly.*—An industry is said to be monopolized when the supply of its products or services is under the control of a single selling agency. This agency may be a single firm, which has in its own hands the entire industry; but there may be many firms in the industry and yet monopoly may exist, provided that the firms all act together as one agent for purposes of selling. Monopolies fall into two classes; in the one class the monopoly is the outcome of technical considerations which make it impossible without great waste for more than one firm in each market to engage in the industry; in the other class technical considerations impose no such restriction on the number of firms that can engage in the industry, and the monopoly is due to

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\*From *Economics; An Introduction for the General Reader*, New York, 1920. The Macmillan Company. Reprinted by permission.



combinations between firms which previously competed. In the first class monopoly is usually complete and permanent; in the second it is seldom complete and seldom permanent; but even when the attempt to secure monopoly fails, it leads to important modifications in the structure of industry.

*Public Utility Monopolies.*—The chief industries that fall within the first class are the supply of water, gas, and electricity; street railways; and postal, telegraph, and telephone services. If railways may be taken as belonging to this type, then perhaps a quarter of the capital of the United States is invested in these industries. The chief characteristic of them all is that they are tied down by the nature of their equipment and organization to serving the particular market in which they are situated. This is so, because the products of the gas, water, and electric light industries, and the services of the other industries mentioned, are distributed and delivered to the consumer not by the ordinary means of transport, but by specialized means forming an important part of the "plant" or fixed capital of the industry. A gas or water company can supply only the district reached by its pipe lines, a street railway company only the district reached by its lines, a telephone company only the persons connected by wire with its exchanges. But if these companies have their market restricted, they have it to themselves. Water, gas, and electricity can be supplied cheaply only to consumers connected with the supply pipe or cable;

and since it is obviously impossible to have two sets of gas mains, water mains, and cables down every street, the firm with which a consumer is connected has a monopoly of that consumer's custom.

The case of the industries which maintain communications is similar; though their monopoly is not quite so secure, their market is still "protected" by influences more potent than any tariff. Telegraph and telephone systems, postal service organizations, even street railway systems, can be duplicated at less expense than systems of water mains and gas mains; but duplication impairs the efficiency of the service. To duplicate water mains would not impair the quality of the water, but a telephone system is efficient only when it has a monopoly. Any system of communication, to do its work properly, must include all the people who wish to communicate; if the telephone subscribers in a district are divided between two competing telephone companies, then the subscribers of neither will have access to all the people on the telephone in the district. Competition between different telephone companies, different telegraph companies, or different postal services serving the same area is possible only by completely duplicating plant and organization, and, since the number of possible customers—the "market" for the service—cannot increase correspondingly, such duplication can never pay, and is not likely to be lasting. If it were not already appropriated to another purpose, the term "localized industries" would describe this first class of monopolies.

They can serve only the locality in which they are situated, and they are open to no competition from outside the locality; within the locality competition is excluded, in the case of gas, water, and electric light and street railways, by the method of distributing the goods or services supplied, in the case of the communications industries by the nature of the service rendered.

*Economy of Monopoly.*—It will be noticed that all these industries, except the Post Office, require an initial expenditure of capital which is very large in proportion to annual working expenses. The plant in every case is expensive, but economical; it costs a good deal to construct, but cheapens the service to such an extent that competition is possible only from firms with a similar plant; the cost of supplying water, for example, is almost negligible, once reservoirs are constructed and pipe lines laid. Hence a large proportion of the income from fees and charges goes in payment of interest on the capital required for this initial expenditure; if working expenses only had to be met, great reductions could be made in the charges made to consumers. The working expenses again are very largely fixed and independent of the number of persons served or the amount of service rendered. The cost of running a trolley car is practically the same whether one passenger or forty travel in it; the motorman and conductor must be paid, motor power supplied, track kept in repair, and management expenses met. Hence the cost of production per unit of service falls rapidly as the

number of persons served increases, while a reduction in the output or use of the plant brings with it a less than proportionate reduction in expenses or cost of production. In these industries, therefore, unrestricted competition means inevitable ruin to the weaker competitor, and usually loss of all profit to the stronger. Prices or rates will be reduced until they are barely sufficient to cover the working expenses of the weaker firm and give no surplus to pay interest on its capital; the stronger firm (as a rule the larger) has lower working expenses per unit of service and can cut prices still further, and therefore its power to cut prices without actual loss is increased; by cutting it ruins its competitor, but only at the expense of sacrificing all profit itself. There is not the possibility in these industries that there is in other industries and in agriculture of extending the market indefinitely by reducing prices. The market is limited to the population reached by the plant and organization of the competing firms. Once this population is supplied, prices can be cut only at the expense of the profits of the competitors.

Competition, therefore, in the case of the localized services which we are considering, is difficult, wasteful, and futile: difficult because it is only possible by duplicating an expensive organization for a limited market; wasteful, because the services can be supplied at their theoretically lowest cost only if the whole market is served by a single plant or organization, and in the case of communications, because efficiency is secured

only by one system covering the whole market; futile, because the superiority of the stronger competitor is increased by competition, so that competition must result in the establishment of monopoly by the ruin or retirement of the weaker competitors.

### 23. The Chinese Salt Administration\*

*By W. R. S.*

Taxation of salt in China is said to date from about 2200 B. C., tribute salt having been introduced during the reign of Yü, first emperor of the Hsia dynasty.

The Ch'i kingdom (17th century B. C.) in which the manufacture of salt was encouraged under government control, supplied salt from what is now Shantung to all the neighboring inland kingdoms; under the administration of Kuan Tzû it derived a very large revenue from salt taxes and was reputed to be "the richest kingdom in the world."

During the reign of the emperor Wu Ti, 140-86 B. C. (Han Dynasty) special officials were appointed in charge of salt taxes throughout China.

At the beginning of the T'ang dynasty (7th century A. D.) there were said to be eighteen salt lakes and 640 salt wells under the control of the Board of Revenue. Taxes were also levied on sea salt. During this dynasty a reformer named Liu Yen (762 A. D.) arose, who as

\*From *The Encyclopedia Sinica*, Samuel Couling; Oxford University Press, Humphrey Milford, London, Amen Corner, E. C.: 1917. Reprinted by permission.

Transportation Commissioner organized a system of salt administration on lines which may well serve as a model at the present time. Government control was confined to the producing districts and transit taxes were abolished: merchants were allowed to transport salt for sale to any place they chose, but government salt was stored in remote districts to guard against shortage in the supply. Under this system the salt revenue is said to have increased to fifteen times its former amount.

Early in the Sung dynasty (960-1278 A. D.), the modern system of merchants transportation was introduced. Permits called *Yin* were issued by the Central Government on payment of tax and the country was divided into *Yin* areas (*Yin Ti*), in each of which a merchants' monopoly was established.

This system was elaborated in the 14th century A. D., by T'ai Tsu (Hung Wu), the first Ming emperor, during whose reign *Yin* were also issued in return for contributions of rice to the Government stores. Towards the end of the Ming dynasty, however, (early 17th century), the salt administration decayed, a period of disintegration set in and the revenue fell away rapidly.

During the Ch'ing dynasty the salt-producing areas were divided into ten districts, each under the control of a high official who was at the same time the Viceroy of the province: the salt Taotai was, however, the actual administrator of salt affairs. Government and merchants' monopolies existed side by side, and while the basis of the system was the same as during the early

Ming emperors, the rates of taxation and methods of collection in the various districts became more and more dissimilar and extensive abuses crept in. Towards the end of the Manchu régime the lack of uniformity and complete absence of centralized control brought the administration into a most chaotic condition and insistent demands for reform arose.

In 1909-1910 a serious attempt at reform was made and a Central Salt Office (*Yen Chéng Ch'u*, the name being changed in 1911 to *Yen Chéng Yüan*), was established at Peking under the control of the Minister of Finance. Progress was checked by the outbreak of the Revolution in 1911, and no effective reforms were introduced until the reorganization of 1913 was undertaken and the present Central Salt Administration was established.

The Chinese Government Reorganization Loan Agreement was signed on the 26th April, and came into effect on the 21st May, 1913. By Article V the Chinese Government engaged "to take immediate steps for the reorganization, with the assistance of foreigners, of the system of collection of the salt revenues of China," and the Central Salt Administration (*Yen Wu Shu*) was established in Peking under the control of the Minister of Finance.

All administrative functions other than those assigned to the Chief Inspectors and District Inspectors fall within the sphere of Chinese Salt Commissioners, one of whom is in charge of each salt-producing

## DISTRICTS OF PRODUCTION AND CONSUMPTION

Chief Producing Districts	Consumption District	Nature of salt	Method of manufacture
Fengtien... ..	Fengtien, Kirin, Heilung-kiang ... ..	Sea	Solar evaporation
Chihli ... ..	Chihli, East Honan, North Shansi ... ..	"	"
Shantung ... ..	Shantung, Northeast Honan, Northeast Anhui and Corea ... ..	"	"
Kiangsu ... ..	Anhui and parts of Kiangsu, Kiangsi, Hunan and Honan	"	Solar evaporation and boiling
Chekiang ... ..	Chekiang and parts of Kiangsu, Anhui, and Kiangsi ... ..	"	"
Fukien ... ..	Fukien and parts of Chekiang and Kiangsi ... ..	"	"
Kwangtung ... ..	Kwangtung, Kwangsi, and parts of Kiangsi, Hunan, and Kweichow ... ..	"	"
Yunnan ... ..	Yunnan and West Kweichow ... ..	Well	Boiling
Ssüch'uan ... ..	Ssüch'uan, Northeast Yunnan, Kweichow, Hupeh and South Shensi ... ..	"	"
Shansi ... .. (Yuncheng)	Parts of Shansi, Shensi and Hunan... ..	Lake	Solar evaporation
Shensi, Kansu (Huamachih)	Kansu, and parts of Shensi	"	"
Mongolia ..	Parts of Chihli, Shansi, Shensi, and Kansu ... ..	"	"



District. These Salt Commissioners regulate the manufacture and transportation of salt and control the Preventive Forces. In non-producing districts there are Chinese Transportation Officers, who are charged with the supervision of the supply and distribution of salt to the people by merchants. The Government fixes a maximum price at which salt may be sold in each area.

*Manufacture.*—There are two methods of evaporation by solar heat. In the salt-lake districts the sun causes the salt to crystallize at the edge of the lakes or in some cases on the surface of the water. On the sea coast the salt-pan system is generally in vogue, the sea-brine being pumped up by wind sails or being allowed to flow onto prepared beds or pans, being drawn from one bed to another as it becomes more dense, until finally it deposits salt in the crystallizing pans. The bittern brine is in some places used to strengthen fresh brine as it is pumped up. This is the method by which more than half the salt in China is manufactured, salt boiling being impracticable in the greater part of the country owing to lack of fuel.

The salt made by solar evaporation varies in purity according to the nature of the salt in which the pans are made. The finest salt in China is produced in Ssüch'uan, Fukien, and Kwangtung. In south Kiangsu and Chekiang where large reed beds still exist, in Yunnan where there are forests, and in Ssüch'uan where a natural gas is found, salt is still largely manufactured by boiling. In Ssüch'uan coal is increasingly used for

the purpose. The Ssûch'uan works are worthy of special mention. At Tzeliuching, where more than two-thirds of the salt in S. Ssûch'uan is produced, borings are made, often through solid rock, to a depth of some 3,000 feet. The mouth of such a well may be no more than 14 inches in diameter. Brine is drawn up in bamboo tubes some 80 feet long, by 5 or more buffaloes working round a large drum. At some places labour and expenses are saved by sinking the wells in pairs, so that the drawing up of one tube causes the other to sink. From the wells the brine, which is of high density, is carried in buckets or conducted by bamboo pipes to the boiling establishments, where it is boiled by a natural earth-gas or by coal and grass-fuel. In parts of Chekiang brine is boiled in an enormous cauldron of bamboo matting coated inside and out with lime from river shells: it is suspended over a fire by ordinary ropes and can be used for some ten days, after which it is useless for further boiling, but is broken up and sold to manure the land.

Salt after manufacture is stored either at the works or in the depots and godowns awaiting sale. The cost price, exclusive of tax, varies from 40 to 50 cash a catty of 1.4 lbs. in parts of Ssûch'uan to 19 or 20 piculs for a dollar at some works in Fukien. It is purchased from the makers by transporting merchants who generally possess monopoly rights in a given area, and who, after payment of the salt tax, receive a Release Permit upon production of which they are permitted to remove the

salt. The authorized scale is the *Sai Ma* by which one picul equals 140 lbs. avoirdupois, and sixteen piculs equal one ton. The salt is packed in bags of rush, matting or bamboo. In Kirin and Heilungkiang the purchase, distribution and sale is effected by the Government, which holds a monopoly in the whole area. In Fukien also a government monopoly exists. In Fengtien, Yunnan, South Shansi and South Shensi, free trade in salt already existed when the reorganization was instituted. In Kwangtung and Ssûch'uan, and in the greater part of Anhui and Honan all monopolies have recently been abolished to the advantage of the revenue and of the consumer.

The rest of China proper, with unimportant exceptions, is still divided into monopolized districts, though competition of two or more kinds of salt in the same district is increasingly permitted. A monopoly is either farmed out to a merchant under contract for the payment of an annual sum or is owned by a number of merchants who possess the sole right of selling duty-paid salt in a particular district. The chief instance of the latter practice is found in Kiangsi, S. Anhui, Hunan and Hupei, the greater portion of which provinces is supplied with salt by merchants possessing rights formerly purchased from the Government, but now become by custom hereditary and transferable. In these areas the salt is distributed and sold under Government supervision.

Vested interests have hitherto proved too strong for the introduction of such a system of free competition

throughout the country. At present monopolies prevent the people from obtaining salt of good quality and keep up the price by artificial restrictions. Bad and expensive salt is the chief cause of the prevalence of smuggling, which is but inadequately kept in check by a large and costly Preventive Force. Much progress has recently been made toward the reorganization of this Force; the men are better paid and better clothed, merchants' police have been transferred to Government control, and the Force is being concentrated in the districts of production rather than, as formerly, scattered through the consumption areas. The total revenue lost by reason of the failure to control smuggling must, however, still be very considerable.

*Taxation.*—The principle of taxation now definitely adopted is the imposition of a single direct tax at source. The taxes existing in 1913 consisted, generally speaking, of a direct tax around which was grouped a most complicated medley of additional taxes imposed from time to time as necessity arose or opportunity offered, and seldom, if ever, abolished when once imposed.

Levied upon producer, transporting merchant and consumer indiscriminately, collected at any convenient point along the route which the salt had to pass, calculated according to different scales and in various currencies, to five or even eight places of decimals and allocated for such diverse purposes as conservancy, upkeep of schools, the Boxer Indemnity, upkeep of gunboats, support of horse breeding in the Manch' city

at Hangchow, of the Association for giving alms to priests, of widows, life-saving institutions and the association for the prevention of killing of animals, they were such as to baffle the most earnest enquirer. Such anomalies are now practically a thing of the past, and while the rate of taxation has been increased, the people have benefited by the removal of harassing delays and by the abolition of exactions which by their very nature invited extortion and abuse. The rate of taxation at present varies from \$0.20 a picul in parts of Shantung to \$3.50 a picul in Yunnan. Salt for the central Yangtze areas is nominally taxed at \$4.50 a picul, but is in fact considerably less, as, owing to the risk which attends transportation to these areas, payment of two-thirds of the tax is permitted to be deferred until the salt is eventually sold, and when losses occur exemptions are granted. In Hunan also the payment when made is frequently in depreciated notes. The standard of taxation laid down in the Presidential mandate of the 24th December, 1913, is \$2.50 a picul, to be gradually introduced throughout the country except in Mongolia, Chinghai, Sinkiang and Thibet, "where extraordinary conditions prevail."

*Revenue.*—It appears probable that the revenue annually remitted to Peking up to the time of the Revolution in 1911 was about Tls. 13,000,000; the receipts for the whole of China, including sums retained by the provinces for local purposes, were perhaps double that figure. There is no reason to suppose that the salt

revenue increased between 1911 and 1913 and the total net revenue credited to the Foreign Banks in accordance with the loan agreement for the period 21st May to 31st December 1913 amounted to \$17,576,154 only. From 1914 onwards, however, the revenue has steadily increased.

The revenue actually credited in the Foreign Banks during the past three years after the payment of the expenses of administration was:—

1914	1915	1916*
\$60,409,676	\$69,277,536	\$72,440,560

*Charges and Surplus.*—A list of the charges upon the Salt Revenue in 1913 is annexed to the Reorganization Loan Agreement. For all practical purposes it is only necessary to take into account at present the Crisp Loan (£5,000,000), the Reorganization Loan itself (£25,000,000): such part of the instalments of the Boxer Indemnity as may from time to time not be covered by the receipts of the Maritime Customs, and the issued portion (£6,000,000) of the Hukuang Railway Loan of 1911.

The following sums have been paid on account of the Boxer Indemnity:—

1914	1915	1916	1917
\$13,505,833	\$23,787,463	\$10,071,371	nil.

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\*Approximate.

and on account of other charges:—

1914	1915	1916
\$7,600,739	\$10,811,619	\$14,840,534

The surplus placed at the disposal of the Chinese Government has been:—

1914	1915	1916
\$31,304,818	\$27,523,066	\$52,226,185

The Government has agreed to maintain a reserve, amounting to \$10,000,000 with the foreign banks, in order to insure the prompt payment of instalments of interest as they fall due, and to improve the value of the security.

## CHAPTER IX

### BUSINESS ORGANIZATION

#### INTRODUCTION

The word "business" brings to the mind something old and something comparatively new in the economic life of China. The occupation of the merchant, who buys and sells and is engaged in the transporting of commodities from place to place, goes back to the remotest antiquity. The merchant of the Middle Ages in the West finds his counterpart in China. In this occupation the Chinese have earned a reputation for unusual ability. Business, in this sense, means trade or commerce.

There is another, but closely related, sense in which the word is frequently used to-day. In this sense business is concerned with industry and the business man may be called, as he frequently is in America, a "captain of industry." In modern society the business man is often engaged in the organization of the development of the natural resources of a country, in the planning of industrial enterprises, in the building of factories and in the opening of mines.

A characteristic of business, in whatever sense it is used, is the pursuit of private profit. Business enterprise may be defined as the conduct of economic activity



for private gain. A study of the recent economic history of Western nations shows that business enterprise is coming to control more and more of the economic life of these nations. Agriculture is probably less under its control than any other great field of industry, but even in agriculture there is more production for the market than there used to be. China will probably see the spread of business enterprise in the near future. It can, in fact, be seen to-day. In China, too, agriculture will probably be the last industry to come under its power, but in agriculture we see less cultivation for subsistence and more for the market than was the case formerly. This spread of business enterprise demands careful study, but it seems hardly to have been noticed.

Business organization, from the point of view of the industries of China that have been little affected by the industrial revolution, means guild organization. The study of such organization means the study of guild methods. A study of the guilds of the West brings out the fact that these guilds have lost their power and have gone out of existence. We are then face to face with the question as to the future of the Chinese guild. Will the Chinese guild also disappear? To help the student answer this question a reading has been selected which compares the Chinese and the European guild. A debate upon this subject is worth the time and trouble it will take, for it will help in creating a critical and observing state of mind toward the changes that are taking place in China's economic life.

With the growth of modern business enterprise in China has come the corporation. The corporation is a powerful and a useful device for organizing industry and commerce on a large scale. Without the corporation the Western world would never have been able to bring about the development that we see in the West to-day. But the corporation in the West has not reached its high degree of usefulness without long and gradual development. One writer has pointed out that the corporation in its early form in England was so recklessly used that it was made illegal for more than a hundred years. The corporation has not been an unqualified success in China. Dr. Reinsch deals with this subject in the first reading of the first chapter in this book, and his comments may well be reviewed in connection with this chapter.

It is important that the corporation be made to work in China. When, to quote Dr. Reinsch, "the unquestioned honesty and faith which dwelt in the old system of personal relations can be transferred to the new corporate and impersonal method of organization, China will be strong indeed." In the development of the corporation China needs to use the results of the highly developed partnership. The relation of the limited partnership to the corporation and to the unlimited partnership is worth a considerable amount of attention. Such studies are beyond the possibility of the beginning student but they show the large and important field covered by the subject of business enterprise.

The student who sees the importance of the extension of business enterprise in China to cover a wider and wider field, who understands the possible effect upon the guilds of the development of modern business, and who appreciates the importance of the development of the corporation in China, will find that he has grasped some of the facts of first importance in understanding the changes that are taking place in China to-day.

#### 24. The Story of the Jade Industry\*

*By P. T. Lau*

*Ancient Use of Jade.* The word *yu* (玉), or jade, is found in the most ancient literature of China. From time immemorial jade has been regarded not only as a precious stone, but as the most precious of jewels. We are told that kings were wont to exchange cities or towns for a mere piece of jade. Evidently the people of China must have discovered the art of carving jade long, long ago and jade must have been one of the most ancient commodities of trade in China.

*Kinds of Jade.* Generally speaking, jade is of two kinds: white (白玉) and green (綠玉). The latter is used more commonly as jewelry, while the former is used solely to make bracelets for men (in China some men wear bracelets) and for large decorative articles,

\*From an article to be found in the *Chinese Social and Political Science Review*, Vol. III, December, 1918. By P. T. Lau, proprietor of Kwong Shan Choung Jade Shop, Canton. Reprinted by permission.

such as vases, art objects, "artificial mountains," and the like.

With regard to the source of supply of the raw materials, Burma produces the rock or ore (玉石) for green jade, and Turkestan the rock for white jade. The greater bulk of white jade is manufactured in Peking and Shanghai, and a comparatively small amount is worked up in Canton. White jade is rarely used by women for jewelry and so its value is considerably less than that of green jade.

*Green Jade Industry.* As for green jade (hereafter whenever the word jade is mentioned, green jade will be meant), Canton dominates as the center for its production. It would not be an extravagant claim to say that 90% of the whole bulk consumed in the country and exported to foreign countries is produced in Canton.

Canton sets the style for many articles and it is exceedingly difficult for workmen in other parts of the country to copy it, even if they possess the skill, because there is no standardized machinery nor tools for performing the various operations. The same is the case with the Shanghai styles, which can hardly be copied in Canton. The main reason for this is, perhaps, that the workmen are conservative and ignorant. They do not want to break away from the habitual way of doing things. Their muscles have become as parts of machines; whenever something new is done, it deranges the whole machinery. Accordingly, the labor cost would be much higher if the Canton workmen were to

copy the Shanghai style, or vice versa. The same reason may be assigned for the higher cost of articles intended for export trade. On the whole, the Canton workmen are more skilled than those of Shanghai, because in the latter place the unions or guilds are not as well organized and, consequently, many women and other forms of cheap labor are employed in the workshops.

*Importing the Jade Rock.* Normally Canton imports about \$4,000,000 Mex. worth of jade rock annually from Burma, although according to the customs reports the importation for the last few years has been declining. This importing business is handled by seven houses. They all buy direct from Burma. Their profits and losses depend entirely upon the skill and good judgment of the buyer. Hence the buyers for these houses are usually the owners or important partners. The tax at the quarries is about 60% and the transportation costs amount to about 40% more. Thus if a house pays \$50,000 for its rock at the quarries, the cost delivered in Canton will amount to \$100,000. The time for quarrying is about May, as this is the dry season of the year.

*Jade Rock Market in Canton.* Once a year the rock market (玉石墟) in Canton is open for the selling of the rock imported. The time is usually at the beginning of the year (old style calendar), somewhere around the latter part of the first month. The amount of rock to be disposed of determines how long the sale lasts. Purchasers consist of manufacturers, shopkeepers, and even the workmen themselves. The whole year's supply

is sold at this one season. The main reason is that the houses want to sell their entire stock before the purchasers have a chance to cut up the rocks, for if some of these purchasers should strike bad bargains it would discourage further buying. Besides, it is the "psychological" season for buying and selling, because everybody is starting business anew.

*Selling Practices.* It may be interesting to note the system of sales adopted by these importing houses. The rock on sale is put on exhibition in rooms of the importing houses one day ahead of the sale and each piece is numbered. A small piece of each piece of rock is cut away to expose the interior color. Prospective purchasers inspect the rocks and note the pieces they want to buy.

The system of secret bidding is used at the sale. The seller . . . stands in the middle of the hall, wearing a coat with extra long and wide sleeves. When the number of the piece of rock for sale is announced, the buyers rush up to him, grasping his hands under his sleeves to give their bids, talking price with their fingers. The seller has a remarkable memory: not only can he talk price with both hands at the same time, but he is able to remember every number and the price of every piece of rock on sale. When he thinks that he has secured a good price he shouts out the name of the bidder who is entitled to that particular piece of rock, without waiting for further bids. Therefore every buyer has to fight hard for a chance to present his bid

first. The seller is usually a big and strong man, for he must withstand the rushing crowd of buyers trying to grasp his hands, crushing and squeezing him.

The bid thus taken is not final, but is subject to the review of the proprietor, who has the right, according to custom, to reject any bid in case he thinks the price is too low for that piece of rock. Except when the sale is concluded, no prices of bids are announced. The seller cannot show any favoritism or discrimination, since, as soon as the price is made public bidders find out why their bids have been rejected or accepted.

Occasionally a sale is held in the ninth month, that is, prior to the New Year sale, if the importers desire to realize some money earlier. But this sale is always on a smaller scale and less exciting.

*Organization of the Jade Industry.* There are usually about one hundred customers or buyers at the sales conducted by the importing houses. As I have mentioned, among them may be manufacturers, shopkeepers, and the workmen themselves. Anyone who has the capital and confidence in his ability to determine the value of jade may buy rock and send it out to contractors to be cut into whatever he wishes. The color and quality of the jade determine what is best to be cut out of it. No contractor or workman dares to steal anything out of a piece of rock entrusted to him, because there is a careful system of inspection and weighing, and if any dishonesty should be proved the offender would be blacklisted at once.

The contractor or industrial organizer (包工者) owns the workshop and the necessary tools. He goes around to solicit orders and hires men to work for him. The workmen are paid a piece rate. Earnings are divided so that the contractor gets 60% and the workman 40%. For example, if a job nets the contractor one dollar, he gets sixty cents and the men who do the work get forty cents. Out of his 60% of the earnings the contractor has to provide the place for the work, the tools, and the food and lodging for his men. It goes without saying that he has to solicit the orders.

*Jade Workers' Trade Union.* There are some 10,000 workmen engaged in the jade cutting industry in Canton. They are organized into four trade groups or unions (行), namely: (1) the cutters (開石者), (2) the bracelet makers (造鐲者), (3) the plain carvers (造光素者), and (4) the "flowery" or ornate carvers (造花草者). Workmen in the last-mentioned group are highly specialized and get good wages, i.e., about \$1. per day, while men in the other trade groups get about 40 cents a day.

These unions are exceedingly powerful. They can do about as they please and the employers or contractors have no control over them. Systematic "soldiering" or loafing on the job is openly practised. One who visits the workshops cannot but be impressed by the numbers of vacancies or absent workmen. They go out for a walk or to take tea, perhaps once in every hour. If one were to calculate each man's working day, probably it would



amount to scarcely two hours of solid work, and yet the men are supposed to be at work from early morning until nine at night, with rest periods at meal hours. They calculate to earn only a certain sum per day and when that minimum is reached they work no more. Of course, at the same time they see to it that their employer does not make too much money, but just enough to warrant his continuing in business.

Rigid rules are in force governing apprenticeships. No one is permitted to work on any kind of a job without first being a graduate apprentice. Apprenticeship for cutters is set at three years, while the term for the bracelet makers and the carvers is four years. During the period of apprenticeship the apprentice is fully under the control of his master. Whatever he earns goes to the master. In return the master takes care of him, providing him with food and clothing, beside teaching him the trade. The apprentice generally does the rough work and his master applies the finishing touches. Upon graduation the apprentice must join the union by paying an initiation fee of about \$10.

There are no terms in English to express accurately the different agencies handling the jade trade from the purchasing of raw materials to the retailing of the finished products. The industry does not lend itself readily to description in terms of conventional business organization. The reader must stretch his imagination in order to understand the entire organization. The

manufacturers, as I call them, are not manufacturers in the real sense of the word. They are merely buyers of rock from the importing houses, but they neither own factories nor employ workmen. Contractors really do the work of manufacturing. Neither is the jade exchange a wholesale market, although manufacturers sell their products here, because retailers also dispose of their products in this same place. One may even buy from one booth or stall and sell what he has just bought at the next booth in the same exchange, for it is impossible to determine the value of jade exactly. In many cases even the expert jade dealers do not agree in their valuations.

*Jade Exchanges.* There are two jade exchanges (玉攤) in Canton, both located in the west suburb of the city. Each is open every morning from 6:30 to 10:00 o'clock. Each seller rents a place or booth in the exchange in which to display his goods. One of the exchanges handles goods of a superior quality and the other the goods of inferior quality. However, a seller in either exchange usually exhibits his inferior articles and only when you request or when he recognizes you as a "real" purchaser will he show you his good jade articles. The system of talking price secretly is also practised here, as in the jade rock market. Thus no one except the actual purchaser knows exactly how much the seller has charged or has been paid for an article. In these exchanges only a professional can expect to get a good bargain. A layman buying here will surely "pay too

much for his whistle.' He cannot hope to strike a good bargain and it would be cheaper for him to buy at a reliable retail store.

*Retail Shops.* As to the retail business in this trade, there are about forty stores in Canton, mostly located in Tai San Street in the New City. The average store employs about seven persons and does an annual business of about \$20,000. The success of such a business depends almost entirely upon the purchasing agent (買手) who is generally the manager or the head of the store. The expenses in the business amount to about 20%. Accordingly, 25% on cost is the usual mark-up of the "one-price" stores. There are some half dozen one-price stores in the city. Other stores, of course, charge what the customers can or will pay.

There are two kinds of one-price stores. One is called the "true one-price" (真不二價) that is, it charges exactly the price marked. The other is called the "discounted" one price, that is, it gives a discount from the price marked on all articles to every customer. For example, if the article is to be sold for 70 cents it will be marked at \$1, and a discount of 30%, or 30 cents, will be given. This extra mark-up may vary all the way from 30% to 50%. Some stores have followed this system for so long that it is hard for them to change over to the "true one price" system, because their old customers all expect such discounts when making purchases.

*Tourist Trade.* When a visitor or foreigner is taken to a store by a guide it is customary for the guide to get a 20% commission from the store. Hence it is necessary for the guide to add this extra on to the selling-price to cover such commissions. Formerly the commission was only 10%, but the guides are so powerful that they can now demand almost anything from the stores. The stores are largely dependent upon the guides for the tourist trade, and visitors will not buy from stores that are not favored by the guides, and, in fact, buy wherever the guides take them. This accounts for the high prices that tourists and visitors have to pay in making their purchases. As a matter of fact none of the "one-price" stores realize any extra profit whatever from these visitors. If the tourist is charged too much it is because the guide is exorbitant in his demand upon the shopkeeper.

The stores have found it almost hopeless to attempt to remedy this situation, because the guides are well-organized and have spent a considerable amount of money to get their jobs. On the other hand, competition among the stores is very keen, and if one store does not give a guide what he wants he will take customers to one where he can exact better terms. The guides also demand (and get!) other privileges, such as premiums on exchange of other kinds of money into Canton local silver, premiums on drafts, etc.

*Jade Products.* The class of articles being made from jade has been changing in recent times. Formerly

the Chinese officials consumed large quantities of jade in the form of thumb rings, of tubes for feathers attached to the official hats, of snuff-boxes, etc. Nowadays the most popular articles are ear-rings, bracelets, finger-rings, and pendants, while beads, cuff-buttons, necktie pins, and charms are among the most common articles prepared for export.

On the whole, the jade industry is one of the most interesting in China. It is an industry that is truly Chinese. It illustrates in a striking way the methods of business organization and industrial trade unionism that have been developed in China. Business is carried on under highly competitive conditions with a small margin of profit. The power of organized labor is shown at its highest. The industry is a complex one, carrying on its activities on an international scale. It is only one of many such industries in China whose stories are yet to be told to the outside world.

One wonders to what extent these Chinese industries will be modified when in longer contact with Western trade influences and the knowledge of Western business methods.

## 25. Chinese and European Guilds\*

*By H. B. Morse*

In her guilds, as in so many other of her institutions, China illustrates for us Europe as it was in the

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\*From "The Guilds of China," by H. B. Morse. Longmans, Green and Co., 39 Paternoster Row, London: 1900. Reprinted by permission.

Middle Ages; but, while the points of resemblance are numerous, there are many differences, all equally illuminative of the differences between the social and political organization of the East and the West. In China we have had for centuries a theoretically autocratic government, working through a bureaucracy which, though appointed by the autocracy, has been and is in many respects independent of it, and, though drawn from the people, is no longer in touch with them; while the people, so long as the taxes were duly paid and while there was no serious disturbance, have lived their own life of trader and farmer, in democratic equality and, for all essentials of life, in freedom, asking only that the bureaucracy should leave them alone, and organizing politically for only two purposes—protection or protest against the acts of commission and omission by their officials, and rebellion. In Europe we have had, during the period of greatest guild activity, sovereigns playing their people against the pretensions of the feudal nobility, and a nobility which aimed at the absorption of all executive office and was often driven to ally itself with the burgesses against the centralizing power of the king; while the people, conscious of their own claims, were often provided, now by the king, now by the support of their feudal lords, with weapons by which they were able to secure a step ahead toward the municipal autonomy they ultimately reached. In England, to take that alone of the countries of Europe, we have seen the common law developed under the impulse of the people and becoming the paramount law of the realm. to which the king's ministers and servants

and the king's subjects were all equally subjected. In China the customary law of the empire, while still the law under which the trader in the towns and the farmer in the villages both follow their vocations, has taken no such development as in England, and law is not paramount, nor are the emperor's ministers and servants subjected to it. In Europe generally the administration of the law is now so equitable, and even in the Middle Ages was so open, that the people even then were not averse to calling it in to their aid. In China, whatever the cause may have been in a bygone golden age, the application of the law is to-day so uncertain, and its administration so much at the mercy of hidden influences, that the people shrink from appealing to it and prefer to settle their differences among themselves whenever possible.

These are some of the aspects suggestive of difference in the atmosphere in which guilds were organized and developed in both East and West, and, in the West, reached their decline; but here is one motive common to both, the desire to obtain advantages for one's self and to retain them, and at the same time to exclude others from their enjoyment. This was the prevailing motive in Europe during the Middle Ages, and down even into quite modern times,\* and is in China to-day, coupled

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\*Ashley, ii., p. 15; Unwin, p. 1. The powers of the English craft guilds were gradually absorbed into the municipality. In France, Belgium, and Holland the guilds were swept away by the French Revolution; they were abolished in Spain and Portugal in the period 1833-40, in Germany and Austria in 1859-60, Italy in 1864.

in both cases with the conviction that any benefit granted to another must *pro tanto* diminish the profit to one's self. China has not yet emerged from that state; and the fate which has befallen the great London companies, once so influential, but now shorn of all their power, is still, or so it appears, far removed from the guilds of China. These are as active and as effective as in the past; and the explanation given,\* that they have remained so because they have not reached that accomplishment of their mission which has been reached by the guilds of Europe, only partially covers the ground. It is true that the medieval conditions prevailing both in Europe and in China five hundred years ago, are still prevalent in China with but slight change, while in Europe they are so far altered that guilds are no longer needed for the protection of the merchant and the craftsman and the promotion of their special interests; but it is equally true that Europe no longer holds the opinion, once generally held, that trade is a stagnant pool, and that the abstraction of any portion of its content for the benefit of another is detrimental to one's own interest, while in China the people have not emerged from the state in which that view is held. When China's guilds shall be reduced to a stage of innocuous desuetude, it will perhaps be because the social conditions have so much changed that their mission may be considered to have been accomplished, but it will also be because the guild members have formed an economically truer notion of the working of trade.

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\*Unwin, p. 4.



Another reason for the difference in the fortunes of guilds in the two quarters of the globe may perhaps be found in the dictum that "as soon as in any industry the amassing of great capital became feasible, as in the great London companies, the guild system tended to become a mere form." This condition has not yet been reached in China. Great fortunes derived from industry have been, and are, known there; but inquiry will show that they have invariably been made possible by the more or less direct connection of the "merchant" with the bureaucratic world; the merchant has in such cases worked through the guild, but the guild has been his servant, subserving his interests in any direction that he might dictate. In general, apart from the official circle, which is drawn from the people but is armed with extraordinary powers, China is a country of great individual poverty, and of small accumulation of capital; the mere fact that, outside the radius of foreign influence, the ordinary rate of interest per mensem is but little less than the usual bankers' rate in London per annum, is a sufficient indication of this notorious fact.

A further reason is the fact that, in China to-day, the law does not give the individual any adequate protection against coercion by the collective guild. During the Middle Ages in Europe the individual was affected by public opinion to an extent that we can hardly realize, and as the fellow-citizens of a merchant or craftsman were also members of a guild, the moral influences

brought to bear upon a recalcitrant member were of a kind such as we see manifested in a sympathetic strike to-day in localities in which trade unions may appear to dominate the law. The verb "boycott" is of modern coinage, but the thing has existed for centuries; and in former times the boycotted man was an outcast, not even solaced by the sympathy of a political party. In China these conditions still exist. Dame Rumor with her thousand tongues flies from tea-house to tea-house, and circulates exaggerated reports, many times worse than the fact, of the fate which has befallen, or is about to befall, an offender against custom, or one who would injure his neighbor. In Europe, however, the guildsman was also a burgess, and could appeal to the commune—the whole body of burgesses—to protect him from oppression by a portion only of the community. In China his only appeal for protection is to his own guild, which is oppressing him; this is his only buckler against the tyranny of the officials, who are the "king's servants" but above the law, and who are never natives of the town, or even the province, in which they exercise their functions. The Chinese guildsman has thus been debarred from transferring his activities to municipal government, in which he has no share or influence, and has been driven, if he would secure the protection necessary for his trading or his industry, to increase the strength of his guild in every way. The result is that he is helpless against this strength of his own creating.

## 26. A Chinese Corporation

*By Faung Lih-chung*

The following is a paper upon the corporation in China written and submitted as a part of the regular work in a class in Business Principles at St. John's University during the school year 1920-21.

Corporations in China are of very late origin. Even after the opening up of the treaty ports in the middle of the nineteenth century and the beginning of our international trade, the Western idea of corporations did not at once take hold in Chinese business circles. Until very recently the people of the land seemed to have a natural antipathy for Western ideas and a deep distrust of the idea of coöperation and combination. All those who were not known seemed to them to be dishonest and untrustworthy. Such an idea is a great obstacle to the formation of corporations. We often see and hear of many conservative persons who prefer, if they have no "safe" and "secure" firms to which they can take their money, to hoard up what they have rather than intrust it to the modern banks, though these modern banks are usually the better and safer ones. The "crust" of custom is, however, broken at last and over-conservative ideas are rapidly being defeated.

From the legislative point of view, the corporation is of very recent creation. During the last few years of the last dynasty the law began to recognize such an organization. Nevertheless, the legal provisions talked more of "should" than of "must," and the courts, in

deciding cases or suits concerned with corporations, usually had no definite knowledge of the provisions of the law and decided in accordance with custom and common sense. In other words, the law was indefinite. Soon after the establishment of the Chinese Republic the government took the matter up and, in 1914, the Corporations Law was promulgated by presidential mandate. The law is a general one, for under it anyone can form a corporation and obtain registration if he fulfills all the necessary requirements.

We have no definite knowledge as to the exact number of corporations registered under this law. But certainly there must be many. The Commercial Press, Ltd., the Nanyang Brothers' Tobacco Company, and the Chang Yu Wine Producers Company of Chefoo, for example, are all registered.

In order to have a more real and definite knowledge of the corporation under the present Chinese law, let us take up the X. Supply Company as an example.

The X. Supply Company was approved by the Board of Communications and registered at the Board of Agriculture and Commerce on . . . , 1919.

The total authorized stock of the corporation is two hundred thousand shares of a par value of fifty dollars each, and the amount of capital stock with which the said corporation is empowered to begin business is one hundred thousand dollars. The names of the stockholders appear both on the stocks and on the books of the corporation, so that any change in the ownership

of stock must first receive the consent of the corporation. All stockholders must be Chinese.

To all promoters of the corporation "red stock" may be presented by the determination of the Board of directors, but the privileges appertaining thereto are limited to the receiving of "red profits" only.

In the month of March of every year a general meeting of the stockholders is to be held, and in case of important business special meetings may be held at any time if decided upon by the Board of Directors or petitioned for by one-tenth of the stockholders. Notification must be given one month in advance. At the regular meetings the stockholders deal with the following matters:

1. Examination of the books presented by the Directors and hearing of reports presented by the Inspectors.
2. Determination of apportionment of profits and interest.
3. Election of Directors and Inspectors.
4. General discussion of the affairs of the company.

The following can not be effected unless approved by two-thirds of the stockholders:

1. Alteration of the bye-laws of the company.
2. Increase or decrease in the amount of stock.
3. Alteration of the composition or organization of the corporation or combination with other corporations.
4. Entrance into related lines of business.

In the determination of matters and election of officers one share of stock represents one vote. All matters except those stated above are to be decided by majority vote of all the members present, and in case any stockholder can not attend the meeting he may ask somebody present to represent him.

The officers of the company consist of a general manager, who shall be elected from among the directors, and who shall take charge of all the affairs of the corporation, and have the power to dismiss any employee of the corporation; an assistant manager, who shall assist the general manager in all business and who shall, in like manner, be elected from among the directors; two inspectors, who shall be elected from those stockholders holding at least twenty shares of stock and who shall inspect the accounts of the business and the votes at elections; and nine directors, who shall in like manner be elected from the larger stockholders. The directors shall hold a monthly meeting.

No officers are allowed to use the money of the corporation for private affairs or to borrow money in the name of the corporation, or to use the seal of the corporation in acting as surety.

The accounts of the corporation shall be closed at the end of each year and the following shall be announced through the inspectors to the stockholders at the regular meeting:

1. Resources of the corporation.
2. Liabilities of the corporation.

3. Statement of business conditions of the year.
4. Budget for the coming year.
5. Suggestions as to the reserve fund and the apportionment of profit and interest.

The net profit of the business for the whole year shall be apportioned as follows:

One-twentieth shall be taken off for the reserve fund, on each share of stock an eight per cent "official interest" shall be paid, and the remainder of the profit shall be divided into sixteen equal parts, ten parts of which shall be paid as "red profits" on all shares, two parts as "red interest" on the "red stock," one part shall go to the directors and inspectors as bonus, and the remaining three parts shall be divided among the manager, assistant manager and employees of the corporation.

The above is an inside view of a business corporation in China. It resembles the corporation of the West in most respects. The red stock resembles, I think, the preferred stock of the West. In China the word 利 (利) is used to indicate both profits and interest.

## CHAPTER X

### MONEY

#### INTRODUCTION

All sorts of things have been used as money in different countries and at different times. An understanding of this fact serves to remove false ideas from the mind of the student. Any good book on economics will provide the student with a list of the various things that have served as money. The history of China gives us a variety of examples and the student is advised to make a list of the things that have been used as money in this country. Anything which is generally acceptable may be used as a medium of exchange or, in other words, as money.

Most writers add two other uses of money to this first use as a medium of exchange. The first of these two other uses is the use of money as a measure of value or as a "common language of value." We are accustomed to weigh all values that have to do with our material welfare in terms of money. The second of these other uses is the use of money as a standard of deferred payments. It is this use of money that makes it convenient to enter into contracts, to borrow for long periods and to do many things that are necessary in our modern industrial system.



Because of these functions of money and because of the growing field of business enterprise that was mentioned in the introduction to the last chapter, money has come to be a dominant fact in the minds of people when they think of economic questions. Modern writers on economics speak of the pecuniary organization of society and tell us that money gives modern problems their form. They refer to the power of money over the minds of men. A single example will serve to make this clear. You have probably seen in the newspapers some such statement as that China needs money to develop her industries. This statement is, in part, a fallacy. There is a confusion of money and capital goods. What China needs is more machines, better factories, better equipment for her mines, better transportation facilities and other things of the sort. These cannot be procured by increasing the amount of money. But there is also in this statement a recognition of the fact that we measure all things of this sort in terms of money.

The monetary problems of China are usually put together by the careless observer as all of one sort, but we really have at least two sets of problems to deal with in this connection. Much confusion will be prevented if this fact is kept in mind.

The first set of monetary problems arises from the fact that China has no unified system of currency. These problems may be divided into difficulties resulting from China's total lack of standardization of weights

and measures and those, more important perhaps, resulting from the use of silver and copper coinage side by side. There has been no serious attempt, in modern times, to bring these two sets of coins into one system, either by trying the principles of bimetallism or those that govern the successful issue of subsidiary coin. China may be said—to borrow a term from an American writer on money—to have a parallel standard. The difficulties that arise because of the lack of a unified currency in China are well dealt with in the first two readings of this chapter.

The second set of monetary troubles that China faces comes from the fact that China continues to use silver in international payments while most of the other countries with whom she trades are on a gold standard. Since 1873 this has been the source of much trouble because the value of silver has fallen rather rapidly in terms of gold since that year and because the value of silver in terms of gold has fluctuated greatly. Difficulties of this sort have led to the introduction of the gold exchange standard into various countries, especially in Asia. This standard is designed to meet exactly this second set of difficulties and has done so with remarkable success wherever it has been applied.

The success of the gold exchange standard in India, Java and the Philippines led to much agitation for currency reform in this country and to proposals to the government of China that the gold standard be introduced into this country. Practically every foreign

adviser who has been consulted upon China's monetary problems since 1900 has advised some sort of gold exchange standard. The readings by Dr. Vissering and Professor Keynes deal with this subject.

During the past few years China has made considerable progress toward the unification of her currency system. The dollar is generally accepted and seems to be growing rapidly in popularity. The gold exchange standard has not, in recent years, been so much talked of. One reason for this is probably the disorganization of the currency systems of many gold-standard countries on account of the war of 1914-1918.

## 27. Currency Conditions in Modern China\*

*By Wen Pin Wei*

The currency of modern China cannot, properly speaking, be called a system. It is composed of a number of systems. There is the cash coinage; the currency of silver bullion based on the tael unit; silver coins, the dollars of foreign as well as of provincial mintage; and finally there are the minor silver coins, fractional parts of the dollar circulating independently of the unit and with no limitations upon their legal-tender quality. We may, however, regard the currency as on a bimetallic basis with the copper cash and the

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\*From "The Currency Problem in China," by Wen Pin Wei, Ph.D. Columbia University *Studies in Political Science*, Vol. LIX. No. 3; New York; 1914. Reprinted by permission.

silver tael as the units. This must not be mistaken for real bimetallism. Bimetallism in the sense in which it is understood in the West requires free coinage of two metals (gold and silver) both of which are legal tender, with a *fixed ratio* between the units of coinage. The two metals in the Chinese currency, on the contrary, are independent of each other and circulate without a fixed exchange ratio between them. The cash is a standard coin; the tael an uncoined unit of weight. There is a tradition that the cash was intended to be in value the equivalent of one-thousandth of a silver tael, but such a notion has at no time any practical validity since the exchange between the two units depends generally upon their values as metals in the market.

I. *The Cash.* According to one authority the standard weight of this coin should be 57 grains of the metal of which it is made—copper and as much spelter or zinc (sometimes lead) as the copper will take up.\* According to another writer† the cash is described as

a circular coin rather more than an inch in diameter with a square hole in the middle for the convenience of stringing. It should consist of an alloy of copper, 50%; zinc, 41½%; lead, 6½%; tin, 2; or of equal parts of copper and zinc. Each piece should weigh 58 grains troy, or 3.78 grams; but these standards of composition and weight are not free from counterfeiting and the cash in circulation would not measure up to them generally.

\*Dr. G. Morrison, in *The London Times Fin. and Com. Supplement*, Mar. 13, 1905.

†T. Jernigan, "China's Business Methods," p. 80.

Of the issues of the Manchu dynasty, those of the reigns of Shun-chih (1644-1661), K'ang-hsi (1661-1721) and Yung-cheng (1721-1735), as they are now found in actual circulation, are larger and of better quality than those of Ch'ien-lung (1735-1795), Chia-ch'ing (1795-1820) and Tao-kuang (1820-1850), all of which are superior to the issues of the later reigns both in substance and in size. The issues of previous dynasties are found in circulation in considerable numbers, mostly defaced and much worn. The K'ai Yuan coins issued in the Tang dynasty are by no means rare, and have formed part of the every-day currency of the people for twelve centuries. Those of the Tai Ping rebel government are not at all discriminated against. Counterfeiting practices are so common that they have been one of the chief causes of frequent price inflations in local markets, and counterfeit coins are usually accepted without question.

The following three causes may therefore account for the lack of uniformity in weight and in size of the cash coins:

First. Concurrent circulation of issues of many reigns of the Manchu dynasty with the survivals of issues of preceding centuries.

Second. The crude method of coining which rendered uniformity impossible, particularly when the cash mints were not under the control and management of one central authority.

Third. The circulating of many counterfeit coins. Until recently the cash has always been cast in moulds, which made counterfeiting quite easy.

In ordinary transactions no discrimination is made on account of these differences, and even the counterfeit coins, unless they reach a considerable proportion of the circulation, pass comfortably as regular coins. For these reasons the cash may be considered a coin of universal acceptability. Except in the trade centers it is the only currency.

*The Peking Cash Currency.* During the second half of the last century Peking had a currency of its own which was not demonetized until a few years ago (1907), and which deserves special mention. This consisted of the debased and depreciated 10-cash pieces.

The Peking 10-cash coin had a little history of its own. It dated back to the time of the Tai Ping rebellion when the supply of copper from Yunnan was cut off. . . . Partly for purposes of raising money and partly in order "to continue the manufacture of cash" the Government issued many token coins of 5, 10, 50, 500, and 1,000 cash pieces. Iron coins were also minted. These coins never gained a circulation outside Peking, though it is said that some provincial mints also made them. These token coins caused considerable business disturbances in the capital. All of them became depreciated and soon all but the 10-cash pieces disappeared. The latter became the cash currency of Peking, the regular coins having meanwhile been

displaced by the depreciated coins. The 10-cash piece circulated at the depreciated value of 2-cash. The coinage of multiples of the cash had frequently been resorted to in previous dynasties. As will presently appear, the Peking cash was replaced by the new copper coinage in 1907.

*The Tiao.* Cash currency is reckoned in terms of *tiao*, of nominally 1,000 coins. Through an age-long practice of discounting and rediscounting, the *tiao* has come to be quite different from what it had been meant to be. As it is used to-day the *tiao* varies widely among the different districts. For instance, it is 490 coins in Tientsin (one counting as two, and 49 coins passing as 100). In Lanchow and all the eastern section of the country the *tiao* represents from 160 to 163 coins, 16 usually passing as 100. In Peking when the depreciated cash currency was in use 49 to 50 passed as 1,000 (one coin counting as two and the cash being the depreciated 10-cash coins). In Yunnan city in southwestern China the same confusion of the cash currency prevails. In Yunnan city the *tiao* consists of 620 coins, 62 here passing as a nominal 100. . . . Much more might be said of the *tiao*, but the preceding suffices to show that one is likely to commit all kinds of miscalculations in converting the currency of one locality into that of another. That such inconvenience hinders the proper development of trade is obvious.

II. *The Silver Currency.* The establishment of the silver currency has been gradual, even to-day in the

interior regions cash is almost the sole currency. Silver was first introduced as currency in commerce during the paper currency regime, though without the sanction of the government. It is impossible to determine the date of this innovation even approximately. History tells us that Ming Tai-tsu, 1397, in order to maintain the paper currency attempted to prohibit the use of silver currency. Nevertheless silver came into extensive use as currency under the Ming dynasty, and since the establishment of the Manchu dynasty most large transactions and treasury operations have been conducted in silver.

A great deal of the silver stock in China came from foreign commerce. Direct foreign trade with the Western Countries began at Canton in 1516, first with the Portuguese. During the early years, the tea and silk trades brought into China a steady importation of silver. Mr. H. B. Morse estimated that the imports of goods never equaled the exports of tea and silk during the eighteenth century; indeed that such imports never amounted to one-fifth of the exports. The balance was always paid in silver. He estimated that the total importation of silver into China from 1700 to 1830 could not be less than \$500,000,000.\* With the expansion of the opium trade the balance began to be paid in opium. . . .

*The Tael Unit.* The silver currency unit is the *tael* decimally divided into mace, candareens, etc. The *tael*

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\*Statistical Secretary of the Chinese Maritime Customs, *China and the Far East*, Clark Univ. Lectures, 1910, pp. 96-97.



in the Chinese system is a measure of weight as well as a money of account. Through lack of governmental regulation, the tael has come to be in the course of time very irregular in weight. Again the purity of the silver bullion is liable to variation. Thus commercial usages have come to recognize several degrees of fineness in the bullion in every important market. The weighing and testing of the bullion involve not only loss of time but danger of inaccuracy. Of course modern nations in the West have got over this difficulty by means of coinage. The coins are minted by the Government and each contains a fixed amount of metal of an invariable degree of fineness. All the trouble of the use of bullion is thus done away with. The Chinese Government has never, until recent years, attempted to coin silver. . . .

The following account showing the nature of the silver tael currency in the city of Chungking is taken from the *Times*,\* and is more or less true of all the trade centers of the country:

Here (in Chungking) the standard weight of the tael for silver transactions is 543.7 grains, and this is the standard for all transactions in which the scale is not specified. Usually, however, a modification is provided for, depending in some cases upon the place from which the merchant comes or with which he trades, and in others upon the goods in which he deals. A merchant coming from Kweichow, or trading with that place, will probably, but not certainly, use a scale on which the tael weighs 537.2 grains; a

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\**London Times*, March 13, 1905. Cf. H. B. Morse, "The Trade and Administration of the Chinese Empire" (1907), p. 145.

merchant from Kwei-fu, a town on the Yangtze, a hundred miles from Chungking, will buy and sell with a tael of 550.7 grains; and between these two extremes are at least ten topical weights of tael all "current" at Chungking. In addition to these twelve topical "currencies" there are others connected with commodities. One of the most important products of Szechuan is salt, and dealings in this are settled by a tael of 544.5 grains, unless it is salt from the Tze-liu well, in which case the standard is 545.7 grains. A transaction in cotton is settled with a tael of 543.1 grains, but for cotton yarn the tael is 544.1, and for raw cotton the tael is 536.0 grains.

This seems confusion, but we are not yet at the end. Up to this point we have dealt only with the weight of the scale, but now comes in the question of the fineness of the silver with which the payment is made. At Chungking three qualities of silver are in common use—"fine silver" 1000 fine current throughout the Empire, "old silver" about 995 fine, and "trade silver" between 960 and 970 fine; and payment may be stipulated in any one of these three qualities. Taking the score of current tael weights in combination with the three grades of silver, we have at least 60 currencies in this one town.

A great deal more might be said about the tael currency system, but what has been given suffices to show the variableness of this monetary unit and the coins of the variations. The result of employing uncoined silver currency with such an imaginary currency unit has been most unsatisfactory. No other single factor has been so great a hindrance to the development of the internal commerce of the country and trade relations with the outer world. Higging not only about the quantity but also about the quality of silver forms an essential part of legitimate business, and when a merchant trades with distant places careful deductions and fine calculations about the currency are necessary in order to prevent making mistakes.

Furthermore, the rate of exchange between this silver currency and the cash currency is a fluctuating one, there being no fixity between these two standards. Under these circumstances the business of money changing has become a very lucrative trade. The money-changers perform the useful function of converting one currency into another, in order that purchases can be made with the money that is "current" in such purchases. Dr. Morrison sums up the situation by declaring that "Germany a century ago was a paradise of money changers, with its countless coinages each circulating in its own principality; but that was simplicity itself compared with China."\* To those who are conversant with the intricacies of the Chinese currency this is but a mild statement of facts.

III. *Foreign Dollars.* Foreign dollars found their way into China in the course of centuries of coast trade. The history of the dollar is a very interesting one. It is said that the Portuguese and the Spaniards brought dollars into China as early as the seventeenth century. These coins soon gained popularity, and later the East India Company imported dollars with which they bought tea and silk.† The early trade relations were carried on almost exclusively through Canton city, and that port by an edict issued in 1757 was made the sole trading post. It remained so until after the Opium War.

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\**China Review*, vol. iii, p. 2, year 1874-75.

†*Ibid.*

The coin that gained the greatest popularity in the early foreign trade was the carolus dollar of the reign of Charles IV (1788–1808) of Spain. Speaking of the American trade of the early nineteenth century, Mr. H. B. Morse says that American products were shipped to Europe, and there sold; the proceeds in Spanish dollars were then sent back to America for transmission to China. Or the ship might be engaged for a time in the carrying trade between the European ports, which was very profitable to neutrals during the Napoleonic wars, until she had accumulated a sufficient sum in Spanish dollars, with which she then sailed for Canton. Tea and silk were shipped back in exchange for these coins.\* In another place the same author says that during these years 60 per cent of the total value of the trade with the United States was in Spanish dollars.†

“Imitation dollars” were made at Canton by individuals with permission of the officials. It is said that the Provincial Treasurer once ordered the silversmiths to make dollar pieces “like those made by the foreigners” in Ch’ien-lung’s reign (1735–1795). This order caused trouble. Profit lead the silversmiths to use more alloy until they got to mixing five parts of alloy with eight parts silver. The result was that these coins soon depreciated in the market and subsequently orders were issued to prohibit private coining. But it seems that the order was not effective.‡

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\*H. B. Morse, *op. cit.*, p. 84.

†*Ibid.*, p. 93.

‡*China Review*, vol., iii, p. 8.

There were various other things which tended to destroy popular confidence in the foreign dollars after they had gained circulation to a considerable extent. Many coins were debased by fraud. . . . The debasement of the sound coins and the circulation of "imitation dollars" led the business men to adopt precautionary measures; hence we have what are commonly called the "chopped dollars."

The "chopped dollar" resulted from over-precaution. The merchant into whose hands the foreign dollars came, having lost his confidence in them, would chop them with an impressed ideagram, usually about one-eighth of an inch square, thereby giving them his guarantee of genuineness. When this was repeated by each succeeding banker the coins became defaced and resembled a sort of disc. The "chopped dollars" were in general circulation at Canton.

Attempts to coin silver dollars seem to have been made in other places by local authorities. It is said that an attempt was made to coin the silver tael currency at Shanghai about 1856. A coinage of dollar pieces was also tried in the provinces of Fuchien [Fukien] and Formosa about 1835 to pay the troops. . . . These coins seem never to have gained any extensive circulation, and coinage by a government mint was not undertaken until near the close of the nineteenth century.

There was an attempt made to suppress these foreign coins together with the importation of opium shortly before the Opium War. The provincial Treasurer sent

a protest to Peking (1836) against such an action and declared that the coins were of great convenience to trade and unlike the opium were producing not the slightest injury to China. The official showed that the coins had then an extensive circulation in the four coast provinces in the southern part of China.\* After the war all the different kinds of foreign coins were declared lawful money in Canton.

The carolus was but one among several kinds of dollars that were then in circulation. There were also the Peruvian, Bolivian, Chilian, and Mexican dollars and the rupee. The South American dollars had been driven out of their home countries by the circulation of depreciated paper currencies, and a portion found their way to China. . . .

Shanghai was made an open port by the treaty of Nanking, 1842. It soon rose to be the center of the foreign trade of Central China. The carolus dollar was adopted as money of account in this trade at Shanghai. There was a steady importation of the carolus dollars to settle the balance of payment. Mr. Morse states that in the year 1856 the import of treasure to settle trade balances amounted to \$20,400,000; for the next year \$17,500,000 in silver. To meet this demand for silver the supply of the carolus was insufficient. This led to its abandonment as the money of account and the Shanghai tael was adopted instead in January, 1857.†

\**Chinese Repository*, vol. v, p. 419, 1836.

†Morse, *op. cit.*, pp. 467-8.

The coin that has been the most popular in recent years has been the Mexican dollar. Many competitors have appeared in the market but none have succeeded in displacing it in popular favor. The American trade dollar was declared lawful money promptly after its appearance; but most of these trade dollars went to the melting pot, being slightly heavier than the Mexican coin. . . . The carolus is now found only in certain localities on the lower Yangtze River. In these places it has obtained a scarcity value and is very much overrated, particularly in Anhwei province where it commands a value sometimes 10 per cent higher than the Mexican. In most places all these dollars are regarded as so many parts of the silver tael.

IV. *Provincial Silver Coinage.* Silver coinage was first undertaken and a mint established for it in 1887 at Canton, not as a part of a national currency system, but as a provincial undertaking for the convenience of trade. Before the close of the century several silver mints had been established in the provinces, all without the direct control of the Board of Revenue at Peking. The designs of the coins were different, and the quality and weight of the silver used were not uniform. This was inevitable inasmuch as the Central Government did not exercise any supervision over the mint operations. The addition of these provincial dollars to the circulation further confused the currency conditions. Moreover, the silver mints, finding that there was a popular demand for the fractional silver coins, issued an enormous amount

of these minor pieces, greatly out of proportion to the output of the dollar pieces. The mint at Foochow minted nothing but minor silver coins on account of the seniorage profits. The result was that the fractional silver coins depreciated in terms of the dollar unit and have since been fluctuating in the local markets and circulating without reference to the standard coin. . . .

The provincial dollars never quite succeeded in displacing the Mexican and other foreign dollars. As we have already mentioned, the silver mints soon after their establishment devoted their energy to the coinage of fractional silver coins, with the result that the latter depreciated. A dollar commands a price in these subsidiary coins ranging from 10 to 12 dimes.

The circulation of these coins, both of foreign and of provincial mintage, from the point of view of convenience of trade has been beneficial. But these coins have been in the nature of an "addition" to the earlier cash and uncoined silver currency. . . .

Aside from the metallic circulation there is a considerable note currency issued by the banks and money changers current in local markets. Of this paper currency, a part is notes based on the cash. Such cash notes form a considerable portion of the ordinary currency. They circulate independently of government guarantee and almost any concern can issue them if it so desires. The notes are rarely current outside the district where the credit of the issuer is known to be



beyond question. There is also an increasing amount of silver notes based on the tael or the dollar. Those notes issued by the foreign banks, particularly by the Hongkong and Shanghai Bank, circulate extensively in the advanced commercial centers.

To conclude: It can be seen from the above description of the currency conditions that even at present China has no uniform system. Economists attribute to money two distinct characteristic functions. They call it a medium of exchange, for it is by the use of money that exchanges are made in a civilized country. They also call it a measure or standard of value, by which they mean simply that it is the standard of prices. No one single unit of currency in the Chinese system, if so it may be called, performs the latter function for the country as a whole. The present conditions are the result of the *laissez faire* policy. From the point of view of public welfare nothing seems to be so urgent as to reduce this tangle of systems with its shifting double-standard currency to a single system with one definite standard of value. A system of coins consisting of demoninations adjusted to serve the convenience of trade, but all standing in a fixed relation to the unit of value, would secure the following advantages of which the present confusion deprives the public:

It would stimulate commerce and encourage internal trade development by enabling the business men to trade with the most distant parts of the country on a fixed basis of value.

It would greatly stimulate foreign commerce, which has been seriously hampered by the uncertainty and lack of uniformity in the currency used.

The greatest benefit, however, would result from removing the inconveniences and confusion of the existing state of affairs. For monetary reform would substitute one system in place of many, thus making it no longer necessary to convert one kind of currency into another, each of which stands in no definite ratio to the other but fluctuates in the market just as the law of supply and demand dictates or the speculators wish to make it. It would relieve the business men and others of the necessity of weighing and testing and calculating, which the uncoined silver currency now makes unavoidable.

Considering China's exceedingly loose political structure, the enormous extent of the country, and the widely divergent local economic conditions, to introduce a modern system is no small task.

## 28. A Note on Some Anomalies in the Currency of Hongkong\*

*By W. J. Hinton*

We have then the following peculiarities to account for: The subsidiary coins of the Colony, after having

\* Adapted from an article, "A Note on Some Anomalies in the Currency of Hongkong," in the *Indian Journal of Economics*, Vol. 2, Part 3, December, 1918, by W. J. Hinton, M.A., Professor of Economics, University of Hongkong. Reprinted by permission.

been at a premium for many years, went to a discount about 1906 and remained at a discount until quite recently. They are now at par. The paper money of the Colony, being promises of various banks to pay silver dollars, has been at one time worth less and at other times worth more than its face value. . . .

The matter of the subsidiary coin is comparatively simple, and will be cleared out of the way first.

The subsidiary coin was at a discount at the time [when this was written], because too much of it had been made: yet when the process of making was at its height the coin was at par, or even at a premium, and disappeared as fast as it was put into circulation. The requirements of the Colony in subsidiary coin have been estimated at \$2,000,000, but the table on the following page shows the amounts put into circulation, prior to 1906, when the discount first showed signs of becoming permanent and heavy.

An inquiry was then set on foot and a Subsidiary Coin Committee was appointed in 1907, which reported that the depreciation was due to a large over-issue of Hongkong subsidiary coinage, and also to the excessive circulation in the Colony of subsidiary coins struck at the Canton mint.

In fact, the Hongkong Government had been supplying the neighboring Chinese province of Kwangtung with subsidiary coin, and spending the handsome seigniorage as current revenue, until the Provincial Government, realizing the profits to be made, began to

## CIRCULATION AND PROFITS OF SUBSIDIARY COIN

Year	Approximate amount of H. K. Silver and copper subsidiary coins put into circula- tion up to Dec. 31.	Withdrawn	Profit	Loss
	\$	\$	\$	\$
1894	11,918,125.00	...	811,345.55	...
1895	13,750,125.00	...	152,600.88	...
1896	15,985,125.00	...	110,196.20	...
1897	18,435,125.00	...	115,015.91	...
1898	21,778,125.00	...	148,044.49	...
1899	26,333,125.00	...	168,553.25	...
1900	29,985,125.00	...	191,533.40	...
1901	33,271,125.00	...	183,515.90	...
1902	36,493,125.00	...	126,536.87	...
1903	39,783,125.00	...	76,440.18	...
1904	42,518,245.00	...	100,572.03	...
1905	43,604,205.00	...	41,880.00	...
1906	43,999,830.00	3,468,000.00	...	387,937.35
1907	...	Nil	...	Nil
1908	...	810,000.00	...	164,674.72
1909	...	820,259.04	...	76,863.17
1910	...	429,100.00	...	166,282.67
Total	43,999,830.00 5,527,459.04	5,537,459.04	2,226,234.66 795,757.91	795,757.91
Bal.	38,472,370.96		1,430,476.75	

coin its own dollars and subsidiary coin. The Canton mint was set up in 1888, but soon discontinued the minting of dragon dollars, turning itself to the more profitable and congenial task of minting subsidiary coin. Of all this subsidiary coin the most popular are the twenty cent pieces, which have now become the commonest currency of Canton. That minting went on, until in 1916 the twenty cent pieces were discounted almost to their rather uncertain bullion value, and were even shipped to Shanghai as silver bullion when the price of silver rose in the summer of that year.

To return to the state of affairs in 1906-8: attempts were made to induce the Canton mint not to coin any more subsidiary coin, but these attempts were attended with very little success. The two subsidiary coinages continued to mix and to be used in both the colony and the province, and they continued to depreciate, the predominant influence being the amount of the issues by the Canton mint. A somewhat half-hearted attempt to redeem all subsidiary coin which happened to be paid into the Colonial Treasury did not have any great effect upon the discount, and the subsidiary coin poured into the Colony from the Province fast enough to raise the rate again. It was felt that the time had come for more determined action. Accordingly the local transport companies refused to accept any but the Hongkong subsidiary coin in payment. In doing this they were certainly within their rights, and they were thought to have the support of the Government. The consequences,

however, were very curious, for the Chinese boycotted the trams. Free rides were given by the enterprising company in order to break the spell, and these rides were greatly appreciated, especially by the younger members of the community, but when any question of payment arose the boycott was as determined as ever. Finally, the Government stepped in, and secured powers by an Ordinance to divide the city into districts, imposing additional taxation upon the district which harbored the boycotters. At the most interesting stage of the struggle, when unwillingness to ride in the trams promised to become very expensive to oneself and one's neighbors, the boycott broke down, and shortly afterwards, in June and July, 1913, the Legislature passed an Ordinance forbidding the use of notes and subsidiary coins other than those of the Colony. This Ordinance came into effect without difficulty, but did not remove the discount, as some over-sanguine persons had hoped. Naturally it displaced the Canton subsidiary coin by a certain amount of Hongkong subsidiary coin drawn from Canton. Since then the Treasury has redeemed as much as current revenue would allow, with the result that the subsidiary coin is now almost at par. It is probably too much to hope that the subsidiary coins will always be exactly at par, for the Chinese have an inveterate habit of exchanging currencies, and there is a money-changer's market in all coins. Temporary scarcities of small coin may occur from time to time.

The fluctuations in the discount on the silver dollar are not so easily accounted for . . .

The ratio between dollars and notes seems . . . to vary with the disparity between the rate of exchange and the value of the dollar as silver, provided that silver can be freely exported. The margin by which the rate can lag behind silver parity will depend upon the cost of collecting silver and sending it to the most profitable market. But there is little bar silver in Hongkong, and therefore this arbitrage operation has to be carried out in Mexican or Hongkong dollars, or in fen, Cantonese subsidiary coin, or anything else of that kind. The best, though not the only market for Mexican dollars is at Shanghai, and this makes it important to compare the position of silver in Hongkong and Shanghai. Now the disparity of the sterling rates was often greater in Hongkong than in Shanghai even when silver was allowed to pass freely in and out of the Colony; hence wide variations in the tael rate. At any given time, with silver at a given price the silver-sterling exchanges fluctuate about a silver parity. They fluctuate within limits fixed by the cost of sending silver bullion to the centers where it can be marketed for gold. Now it may happen that when the price of silver advances the exchange is already high, and pressing, as it were, against the silver specie point. In that case trade conditions will allow of a rise of the rate which may keep pace with the rise of the price of silver—if the latter does not go very fast. But if the

condition of trade naturally established a rate pressing against the other specie point, i.e., a low rate, then the rise in silver would be followed reluctantly as it were, and a considerable lag might result, which would be the greater, the more rapid and extensive the rise of silver. In fact when silver rises very rapidly the genuine trader generally steps back out of the market and only inter-bank and more speculative business is carried on. It is clear that the trade conditions will not be the same in all ports, and it is also a fact that the Shanghai market is far more speculative and perhaps more freely competitive than the Hongkong market. It is not surprising, therefore, to find that in the summer of 1916 when the price of silver made a spectacular advance, the rates in Shanghai and Hongkong lagged behind by a percentage which increased as the price of silver rose, and was greater for Hongkong than for Shanghai. . . . In other words, the Shanghai rate more nearly follows the price of silver than does the Hongkong rate.

It would appear, therefore, that the premium on dollars\* occurred when the Hongkong and Shanghai sterling rates of exchange were more than 3 per cent below silver parity, the Shanghai rate being below parity or only slightly above it when the Hongkong rate was above parity. When the Hongkong rate was more than 3 per cent below parity, generally by a

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\*Which is the same as a discount on notes.



considerable percentage more than the Shanghai rate, the notes went to a discount. The most probable explanation of this is that silver is exported when the rate is more than 3 per cent below parity and imported when it is above. This silver is obtained by the Chinese who deal in this business, not by presenting notes to the Hongkong and Shanghai Bank for encashment, but by exchanging notes for silver in the money changer's market, or by bringing down silver from Canton in exchange for notes. That silver will ordinarily be dollars and it is limited in amount and not easy to collect. The consequence is that it goes to a premium in this market, that is to say, the notes go to a discount. On the other hand, when the Hongkong rate is above parity the dollars will tend to flow back into Hongkong and the notes will go to a premium in the same market.

In practice one speaks of a premium on the silver dollar, not a discount on the notes, and vice versa, for all transactions are reckoned in notes in spite of the fact that the dollar is legal tender.

This movement of silver out of the Colony should be reflected in the tael rate, the ratio of exchange between the currency of Hongkong and that of Shanghai. This is an exchange between two silver currencies, nominally at least, though we have seen that Hongkong really has a paper currency. This tael, of course, is really a money of account, for it is the Shanghai weight tael with an allowance for fineness

and a "convention" which counts 98 of these as full payment for a debt of 100. . . . So in Shanghai the currency is dollars and subsidiary coins, but accounts are kept in dollars and taels and big transactions carried out in taels.

Theoretically, then, the rate of exchange for Hongkong dollars into taels cannot vary by more than the cost of moving silver from Hongkong to Shanghai and vice versa. The mint par, if one can speak of a mint par where one of the currencies is so abstract, is practically \$100 = Tls. 71.5. In practice, however, there is no mint price at which dollars can always be made into taels or vice versa, but a market price which fluctuates considerably and not very regularly within the limits fixed by the cost of melting dollars into sycee in Shanghai and of coining dollars at Bombay. Nevertheless there is at any moment a par for dollars, and one would expect specie points beyond which the rate cannot go. As a matter of fact those specie points are not effective because of the small amount of silver available in Hongkong for the arbitrage and the lack of a mint at Shanghai and Hongkong. The Chinese mint does not affect the question. . . .

The conclusion that the unfortunate variations in the ratio of exchange of the silver and paper dollars was at least partly due to the use of dollars to arbitrate differences between the sterling rates at Hongkong and other silver centers, especially Shanghai, is confirmed by the effect of the prohibition of the export of silver in

1916 and 1917. The prohibition at first extended only to the Hongkong dollar, but as the Mexican dollar at once went to a premium it had also to be included. The consequence is that the notes and silver now exchange practically at par, but the sterling rate departs from parity even more easily than before the prohibition, and it avoids the violent fluctuations which once characterized it. In fact we have something intermediate between a gold and silver standard; the rate is fixed by the trade requirements, including speculation, and as there is no possibility of arbitrage in metal, the rate must be very much more under the control of the big financial houses than was formerly the case. Export of silver can still take place under licence, but I do not know what guides the Government in granting or refusing licences.

It will be interesting to see whether this experiment will modify the opposition which has existed in some quarters to the idea of a gold standard for Hongkong. Hitherto it has been urged that to establish such a standard for the Colony while it has a hinterland with a different system of currency would be to lose for it the financial leadership of South China. The notes of the Hongkong and Shanghai Bank have already gone to a discount in Canton, and this may confirm the opinion of the pessimists. However that may be, the currency is now practically the creation of the Hongkong and Shanghai Bank, which is our unofficial Master of the Mint.

## 29. The Gold Exchange Standard\*

*By G. Vissering*

Beside the gold standard and the limping standard there is another system called the "gold exchange standard." To a certain degree this is a variety of the limping standard.

Such a gold standard was not originally invented as a new system. It used to be the name for an actual state of currency which was found in some countries, where it had gradually developed, owing to historical circumstances, local usances and national characteristics. It started as a new name for things actually found in practice and only in later years has it grown into a scientific system, and has it been put into practice as such.

The Dutch Colonies in Asia, the Straits Settlements and the Philippines are typical instances of such a gold exchange system, but we find that its origin in these various colonies is not always the same, as it has either gradually developed during practical use, or, elsewhere, been adopted on purpose as a scientific system.

There are still differences among the various forms in which such a gold exchange standard may present itself. It is found in countries where currency paper is issued by the government, with a guaranteed value, but

\*From the volume "On Chinese Currency," by Dr. G. Vissering, President of The Netherlands Bank, Amsterdam, 1912; J. H. De Bussy. Reprinted by permission.

also in countries like Netherlands India where bank notes are used as fiduciary currency.

Moreover, a gold exchange standard is not incompatible with a circulation of standard coins within the country itself, nor even of such standard coins as may be used as a remittance to other countries for the purpose of maintaining the parity of the exchange or of settling an unfavorable balance of payment. A proper gold exchange standard, however, supposes that such coins are not actually in circulation, but that the currency, including banknotes or government currency paper, as far as it is based on that currency, is only, or at least chiefly, maintained at par by a gold reserve abroad.

This explains why various definitions are sometimes given of a gold exchange standard system. In the Straits Settlements and in the Philippines, where we find at present the purest application of this system, it is by no means impossible to bring into circulation, or at least to accumulate a large supply of sovereigns or gold eagles. If this were done to such an extent that the circulation became saturated with these coins, with the result that any amount of silver token currency, of currency notes and of banknotes would always be exchanged into these gold standard coins, leaving a sufficient number of gold coins ready to be exported in settlement of international balances, it would indeed be difficult to recognize the remains of the gold exchange standard system. As long as these conditions lasted there would practically be no gold exchange standard;

an actual gold standard or limping standard, with silver token money would have taken its place.

Sometimes, therefore, a gold exchange system is only a variety, with a gradual difference in application, of a currency system which is really based upon a gold standard or rather upon a limping standard. . . . The gold exchange standard, as a system, has a particular importance for a country like China, where an unmixed application of a gold standard or limping standard will very likely be found impossible for the time being, and we shall therefore devote Part II of this volume to the significance of the gold exchange standard system, and its application.

We must only repeat here, for the sake of clearness, that for the purpose of this treatise, we consider as a gold exchange standard every more or less complete application of a system, which consists of a circulation, within the country, of . . . such means of payment as have not in themselves a sufficient intrinsic value, or no value at all, and which are being maintained at a parity with gold not by an extensive circulation of gold coins nor by a large stock of gold *within* the country, but by an explicit gold reserve abroad, on which drafts are made for that purpose, either on term, at sight or by telegraphic transfer.

In Part II the author deals with the gold exchange standard in Netherlands India, the Straits Settlements, the Philippines and British India. His outline of the history of the currency in Netherlands India is given below together with his comments on the first two periods. Speaking of Netherlands India he says:

This country has now almost completed its course through the various phases which are possible with a gold exchange system, whether in a pure condition or mixed with other elements, and it is therefore worth while to retrace this evolution. . . .

Five distinct periods can clearly be discerned in the monetary history of Netherlands India, viz.:

*First Period.* Before 1845. Great confusion in the currency, chiefly owing to a very serious redundancy of copper coins. In conformity with Gresham's law all the silver had disappeared. The copper currency was debased. Trade was much hampered.

*Second Period.* 1845 to 1854 or 1859. The government lends vigorous assistance by the issue of silver certificates; withdrawal of the copper surplus from circulation. Unmixed application of the gold exchange system (then; silver exchange system). Adoption of the pure silver standard by act of May 1, 1854. Large imports of silver standard coins and withdrawal of the silver certificates.

*Third Period.* 1854 to 1877. Pure application of the silver standard system with silver as the standard of value. Extensive circulation of silver standard coins, and consequently no further reason for the application of an exchange system.

*Fourth Period.* 1877 until recent years. The gold ten guilder piece is introduced as gold standard coin by act of March 28, 1877. The silver standard coin is reduced to the rank of token coins, though remaining

legal tender. Owing to a continuous depreciation of silver the necessity for a gold exchange system as regards these token coins is revived, in as much as gold is neither found in the circulation nor otherwise present in the country to any important extent.

*Fifth Period.* Not yet clearly discernible, but probably developing owing to large imports of gold. The transition toward a pure application of the limping standard is being made possible.

Let us now subject these periods to a somewhat closer examination.

*First Period.* The situation in Netherlands India during that period was not unlike the present state of affairs in China.

In the years preceding 1845 the government had made the great mistake of issuing excessive quantities of copper coins, whereas the copper currency had even been raised by law to the rank of legal tender for any amount. Nor was the production of these copper coin restricted to the output of the government mint, for counterfeiting took place on a very serious scale and important amounts of counterfeit coins found their way into the circulation. Huge quantities, for instance, came from England, where some factories found their chief occupation in manufacturing these false coins. At last these practices came to an end owing to diplomatic intervention. No measures whatever were taken by the government to check the superabundance and the inevitable consequence was that, in conformity with the



law of Gresham, the whole circulation of silver was exported. Even the stock of metal of the Java Bank, the bank of issue, went the same way, with the exception of only a few thousand silver pieces.

The Java Bank was consequently obliged to stop the redemption of its notes in silver and the copper currency became more and more debased. Trade came to a standstill since copper, which was the only money in which merchandise could be paid, was of course unsuitable for any but the smallest transactions. At last the situation became so serious that the government was compelled to interfere in an energetic manner.

*Second Period.* The measures which the government could take were hampered by the fact that silver was no longer available in the country and that fresh imports of silver, as the last years had shown, were perfectly useless, since the metal disappeared again as soon as it was brought into the colony. It was therefore decided in the year 1845:

1. To discontinue the coinage of copper coins and to prohibit their import under severe penalty;
2. To issue a kind of paper currency, the so-called "silver certificates."

These certificates pretended to represent silver but the silver was not really kept in reserve. A depreciation of these certificates would therefore have been inevitable if the government had merely supported them with the weight of its own responsibility and with the credit of the home country, without giving a *special* guarantee

as to their metallic value. Such a special guarantee was given to these certificates by the fact that the government undertook to accept them for any amount, not only in payment of all taxes and duties, but especially also in payment of drafts which the government would be prepared to issue on the Netherlands treasury at ten months from date, and which were payable there in hard silver coins. In this way the holders of the silver certificates obtained the certainty that any amount of these certificates could be converted into silver standard metal, with no other deduction than of such expenses as found their expression in the rate of exchange, viz., the expenses of shipping from Holland to Netherlands India, including insurance and loss of interest. The interest was calculated at 6 per cent per annum, and amounted therefore to 5 per cent for ten months. Freight rates and sundry expenses incurred by transshipment were very heavy at that time, and the rate of exchange for government drafts moved consequently between the limits of about 10 per cent over and 10 per cent under par. This did not however impair the merits of the system.

The silver certificates backed in this manner by payment abroad in real silver currency were made legal tender for any amount and were issued in exchange for the copper coins in actual circulation at the rate of 120 per cent copper coins for 100 per cent in silver certificates.

The success of this measure was as complete as could be desired. Confidence was restored within a.

very short space of time, the copper circulation was driven back within reasonable limits and a revival of trade set in. Considerable amounts of government bills on Holland were sold until the redundancy of copper had disappeared.

These silver certificates however remained in circulation until after the promulgation of the new currency act in the year 1854, by which act the currency system of the colonies was established on sound principles and based on the silver standard. In 1854 and the following years large quantities of silver coins were sent from Holland, so as to form a metallic circulation for the archipelago, and in 1859 the last silver certificates were withdrawn at their full equivalent in hard silver cash. They had only acted as a transitional currency.

This monetary reform cost the Netherlands Indian government a sum of twenty million guilders which, directly, was a pure loss of money, but the absolute restoration of a sound currency system was well worth the sacrifice.

The currency system of Netherlands India gave full satisfaction as long as it was based on the act of 1854. We have already mentioned the circulation of some kinds of foreign silver coins in various parts of the archipelago. . . . Their circulation, however, was entirely independent of the actual currency system of Netherlands India.

As far as I know, this was the first real application of the gold exchange standard as a system. It is true that the common standard of value in those years was

not gold but silver, except for England, and the system would therefore at that time have been styled a silver exchange standard; as a system, however, it was fundamentally the same.

This will interest those who believe the gold exchange standard to be a scientific invention of only recent date, because it shows that this system has already attained a respectable age.

Dr. Vissering deals at length with the other periods and states his conclusions in the following paragraph at the end of his book:

As the chief attractions of a gold exchange standard we consider (1) the manner in which, with a more or less systematic application of this system, a circulation of silver token coins and of notes can be maintained at a parity with gold without a direct gold reserve being kept within the country itself and practically without a circulation of gold standard coins,—and especially (2) the elasticity of such a gold exchange system and the possibility of exchanging it without any shock for a more desirable form of application or for another system of still greater efficiency.

### 30. The Gold Exchange Standard\*

*By J. M. Keynes*

The gold exchange standard arises out of the discovery that, so long as gold is available for payments of *international* indebtedness at an approximately

\*From "Indian Currency and Finance," by John Maynard Keynes. London, 1913; Macmillan & Co., St. Martin's Street. Reprinted by permission.

constant rate in terms of the national currency, it is a matter of comparative indifference whether it actually *forms* the national currency.

The gold exchange standard may be said to exist when gold does not circulate in a country to an appreciable extent, when the local currency is not necessarily redeemable in gold, but when the government or central bank makes arrangements for the provision of foreign remittances in gold at a fixed maximum rate in terms of the local currency, the reserves necessary to provide these remittances being kept to a considerable extent abroad. . . .

But although India was not the first country to lead the way to a gold exchange standard, she was the first to adopt it in a complete form. When in 1893, on the recommendation of the Herschell Committee, following upon the agitation of the Indian Currency Association, the mints were closed to the free coinage of silver, it was believed that the cessation of coinage and the refusal of the Secretary of State to sell his bills below 1s. 4d. would suffice to establish this ratio of exchange. The government had not then the experience which we have now; we now know that such measures are not by themselves sufficient, except under the influence of favoring circumstances. As a matter of fact the circumstances were at first unfavorable. Exchange fell considerably below 1s. 4d., and the Secretary of State had to sell his bills for what he could get. If there had been, at the existing level of prices, a rapidly

expanding demand for currency at the time when the mints were closed, the measures actually taken might very well have proved immediately successful. But the demand did not expand, and the very large issues of currency immediately before and just after the closure of the mints proved sufficient to satisfy the demand for several years to come;—just as a demand for new currency on an abnormally high scale from 1903 to 1907, accompanied by high rates of discount, was followed in 1908 by a complete cessation of demand and a period of comparatively low rates of discount. Favorable circumstances, however, came at last, and by January, 1898, exchange was stable at 1s. 4d. The Fowler Committee, then appointed, recommended a gold currency as the ultimate objective. It is since that time that the government of India have adopted, or drifted into, their present system.

The gold exchange standard in the form in which it has been adopted in India is justly known as the Lindsay scheme. It was proposed and advocated from the earliest discussions, when the Indian currency problem first became prominent, by Mr. A. M. Lindsay, Deputy-Secretary of the Bank of Bengal, who always maintained that “they *must* adopt my scheme despite themselves.” His first proposals were made in 1876 and 1878. They were repeated in 1885 and again in 1892, when he published a pamphlet entitled *Ricardo's Exchange Remedy*. Finally, he explained his views in detail to the Committee of 1898.

Lindsay's scheme was severely criticized by government officials and leading financiers. Lord Farrer described it as "far too clever for the ordinary English mind with its ineradicable prejudice for an immediately tangible gold backing to all currencies." Lord Rothschild, Sir John Lubbock (Lord Avebury), Sir Samuel Montagu (the late Lord Swaythling) all gave evidence before the Committee that any system without a visible gold currency would be looked upon with distrust. Mr. Alfred de Rothschild went so far as to say that "in fact a gold standard without a gold currency seemed to him an utter impossibility." Financiers of this type will not admit the feasibility of anything until it has been demonstrated to them by practical experience. It follows, therefore, that they will seldom give their support to what is new.

Since the Indian system has been perfected and its provisions generally known, it has been widely imitated, both in Asia and elsewhere. In 1903 the government of the United States introduced a system avowedly based on it into the Philippines. Since that time it has been established, under the influence of the same government, in Mexico and Panama. The government of Siam have adopted it. The French have introduced it into Indo-China. Our own Colonial Office have introduced it into the Straits Settlements, and are about to introduce it into the West African Colonies. Something similar has existed in Java under Dutch influences for many years. The Japanese system is

virtually the same in practice. In China, as is well known, currency reform has not yet been carried through. The gold exchange standard is the only possible means of bringing China on to a gold basis, and the alternative policy (the policy of our own Foreign Office) is to be content at first with a standard, as well as a currency, of silver. A powerful body of opinion, led by the United States, favors the immediate introduction of a gold standard on the Indian model.

It may fairly be said, therefore, that in the last ten years the gold exchange standard has become the prevailing monetary system of Asia. I have tried to show that it is also closely related to the prevailing tendencies in Europe. Speaking as a theorist, I believe that it contains one essential element—the use of a cheap local currency artificially maintained at par with the international currency or standard of value (whatever that may ultimately turn out to be)—in the ideal currency of the future.



## CHAPTER XI

### BANKING

#### INTRODUCTION

The chief service of commercial banks is to make it possible for exchanges to be carried on more conveniently than they could be carried on if it were necessary to use money. Commercial banks serve the community by enabling us to make greater use of the gold and silver that serve us as money. Banks create a part of the medium of exchange in the form of deposits or of bank notes.

The word "credit" is usually used as a general term to name the essential fact about this function of the banking system. Credit is of such importance in modern economic organization that one economist has divided the modern industrial stage from that of handicraft industry by calling the handicraft stage that of money economy and the modern industrial stage that of credit economy.

The use of credit as a means of exchange means the use of promises to pay. It is obvious that these promises must be guaranteed and that there must be judgment in their use. It is also clear that if promises can be accepted, balanced against each other and cancelled, there will be less need for gold and silver and

a great saving of time and trouble. These are the very things that banks do; where these things are done well the banking system may be considered a good one.

Since the banks have to do with the creating of a part of the medium of exchange, and since they have grown to be of such importance in the carrying on of modern commerce and industry, governments have, in all countries, established some sort of control and regulation of banks. In some countries the government controls the chief and central bank, as in France and Germany. In other countries there is a regulation of the banks or partial control. In every country the relation between the government and the banking system is important. The first reading in this chapter deals with the Bank of China, one of the banks controlled by the government.

The second reading brings out the importance of a bank's reserves and shows the means that have been taken by the chief Chinese banks of Shanghai to provide a safe and usable reserve.

Of the foreign banks in China there is none that has played a more important part in the relation of the Chinese government to the governments of other nations than has the Hongkong and Shanghai Banking Corporation. It is the most important foreign bank in China to-day. Since government finance in China has so frequently involved relations with foreign lenders and since these relations are through the foreign banks in China, the Chinese student needs to know something

about them. For this reason, an account is given of the history of the Hongkong and Shanghai Bank.

The student must not suppose that this chapter, or that any one chapter, can serve to tell him all that he must know about banking if he is to judge events intelligently. It is hoped that he will find the writings of the economists more understandable after reading this chapter.

### 31. The Bank of China\*

*By Chang Kia Ngan*

*The Capital.* The Bank of China was established in the 1st year of the Republic of China and its capital, according to Clauses 2 and 3 of Article 30 of the Articles of Association passed by the Senate in the 4th moon of the 2nd year, was to be \$60,000,000, half of which was to be advanced by the government and half to be subscribed by the merchants. On the government undertaking to pay up one-third of its shares the bank commenced its business. It will be seen that this bank could only commence its business functions after the government had fully paid up \$10,000,000. But the various sums paid by the government from the 1st year to March of the 5th year of the Chinese Republic only amounted to \$4,281,000. Subscriptions by the merchants

\*From an article by Ohang Kia Ngan, Vice President and General Manager of the Bank of China, in *Millard's Review*, Vol. VIII, No. 9, April 26, 1919. Reprinted by permission.

began in the 9th moon of the 4th year; but owing to political changes the total subscription received from the merchants up to the end of the 9th moon of the 6th year amounted to only \$3,643,300. This sum, together with what the government had subscribed, still fell short of the sum of \$10,000,000.

It may be asked how a state bank, whose importance is so great, can win the confidence of the public and secure a firm footing, if not more than a sixth part of its capital as required by its Articles of Association has been paid up after five years of business operations. It was on this account that an application was made, through the Ministry of Finance, requesting the President to sanction an amendment of the bank's Articles of Association so that a general meeting of its shareholders might be held as soon as the capital of \$10,000,000 had been fully paid up, either by the government or by the merchants. As to the government's shares, a sum of \$719,000 in silver was duly paid by the Ministry of Finance to make up the full share of \$5,000,000. At the same time steps were taken to ask the merchants to subscribe \$1,356,700, so as to make up the capital of \$10,000,000, subscribed for equally by the government and the merchants.

Great enthusiasm was shown by the merchants in taking up the shares of this bank, and when the subscription list was closed it was found that a sum of \$2,279,800 had been subscribed in excess of the required amount; so the total amount of paid up

capital was \$12,279,800. It was then announced that this was the capital of the bank and, although business had commenced five years previously, the formal inauguration of the bank dated from this time. It may be felt in some quarters that the first call for \$10,000,000 was too small for a government bank if it had an ambition to establish a firm foundation, but when we consider that the Bank of England had a capital of only 1,200,000 pounds to start with, the Bank of France only Frs. 30,000,000, and the Bank of Japan Yen 10,000,000, we soon see that this is not so. It is said that the credit of a bank is more important than its capital. But it is our earnest hope that after a year or so, when the business of this bank has improved, an additional capital of ten or twenty million dollars will be raised without any difficulty.

Before a general meeting of the shareholders was held, the shares were only accepted in the market at 70 per cent of their nominal value, though a dividend of 16 per cent was paid on each share. Last year, when a dividend of 12 per cent was paid, the value of the shares rose by leaps and bounds, showing that the public acknowledges that great progress has been made by this bank.

The following table shows the monthly quotations of the shares of the bank from June of last year to the present date:

7th year	6th moon	.....\$75.50
	7th    ,,	.....\$78.50

7th year	8th moon.....	\$ 78.50
	9th   ,,   .....	\$ 78.50
	10th   ,,   .....	\$ 78.50
	11th   ,,   .....	\$ 79.00
	12th   ,,   .....	\$ 80.00
8th year	1st   ,,   .....	\$ 80.00
	2nd   ,,   .....	\$ 83.00
	3rd   ,,   .....	\$ 93.00
	4th   ,,   .....	\$100.00

*Reorganization of the Bank.* In order to secure efficiency in any undertaking, the right type of men must be sought for; and when the right type of men have been secured, they must be allowed to remain at their posts long enough to give them an opportunity to show their abilities in the performance of their duties. This principle applies especially to work in connection with the administration of finances, which are different from politics. If the staff of a bank is constantly changed, not only will it be difficult for that bank to make progress, but its credit will suffer heavily.

Since the establishment of the Bank of China in the first year of the Republic, and up to the year before last, when the general meeting of its shareholders was held, —a period of five years—, more than ten governors were appointed, sometimes more than one governor being appointed in a single year. Following the change of a Minister of Finance, the responsible members of the bank have generally had to go with him, and every time a governor was changed great alarm was caused among the

important members and the bank managers. Finally the appointment of a new governor became inevitable with every political change, while the position of the whole staff depended upon the permanency of the governorship. The result was that the more changes that occurred in the governorship the greater was the change in the personnel of the staff. It is quite certain, when every member of the bank is under the impression that he may remain at his post for only five days, that he will not try to do his duties properly, but will merely carry on his work in a perfunctory manner. This is one of the principal causes that made it impossible for the bank to make great progress in its business.

When Dr. Horie, the Japanese financial professor, was in Peking lecturing on financial subjects, he was asked to give his advice concerning the resumption of specie payment by this bank. In his reply Dr. Horie stated that if the bank intended to resume specie payment it should stop the issue of any more notes; and if it intended to stop the issue of more notes, it should stop making any further advances to the government. Before it could stop making advances to the government, however, the bank must be reorganized so as to make it independent of political changes. Dr. Horie further advised that, in looking up the established rules of all the banks in foreign countries, the one that suited the existing conditions in China was that which made the powers of the government and the merchants equal and required the appointment of governors of the bank from

among the directors, who are elected by the stockholders. By such an arrangement the power of election would remain with the shareholders, while the power of appointment lay with the government. As the government had taken up half of the shares of the bank, its right of election should not be less than that of the merchants. In this way there would be no fears on the part of the government of losing its rights; and the merchants would exercise control over the government in the appointment of governors. The Ministry of Finance adopted the advice given by Dr. Horie, and through it the same was laid before the President. The President sanctioned by a mandate the proposed amendments to Article 17 of the Articles of Association, so that a provision was made to the effect that the governor and vice governor should be appointed by the government from among the directors. Since then the members of the bank have enjoyed more security in their positions. From the time of the first general meeting of shareholders held last year to this date, three Ministers of Finance have been appointed, but the governors remain unchanged. Therefore we may say that this also is a sign of progress made by the bank.

It has been pointed out by the public that the change made in the organization of this bank has not been without disadvantage. I admit that some of the comments made are not unfair, but in looking over the laws of the country we cannot find that in every hundred cases there are no demerits. When we say that a case



is a good one we simply mean that there are more merits in it than faults.

Dr. Horie has written a book on China's Finances, and the portion that deals with the amendments that have been made in the Articles of Association of the Bank of China explains clearly the essence of the amendments. I give a translation of Dr. Horie's opinion for the benefit of those who are interested in finance:

"When Mr. Chang came to see me and asked me for advice regarding the resumption of specie payment I answered him as follows: In readjusting the issue of notes there is a precedent and also an established rule which you can follow. These were adopted for the readjustment of the excessive note issue after the Civil war in America. They were also adopted by Japan during the reign of the Emperor Meiji, from his 15th to 19th years, and by Russia at the end of the 19th century. In all these instances either the income was increased or the expenditure reduced, and with any balance left over from the expenditure, redemption of the excessive amount of notes was carried out. When a bank has to suspend the redemption of its notes on account of having made too many advances to its government, the government should try to repay its debts due to the bank with its surplus revenue; while the bank after receipt of such funds should reduce the amount of its note issue in order to effect a readjustment of same. This is a procedure followed in every country.

“The reason for the suspension of specie payment in China is well-known. It is due to too many advances being made to the government and the attending over-issue of notes. If the government pays its debts and at the same time stops calling on the bank for more advances, specie payment can easily be resumed. But the payment of the government debts is closely connected with finances, and unless the government can repay its debts this bank cannot carry out any intended reforms alone. So the only thing open for it to do is to amend its Articles of Association and also make it independent, as a preliminary step.

“What should be the exact relationship between a state bank and its government, forms one of the great problems of finance. Except in the issue of notes, which is subject to interference from the government, the Bank of England is at liberty to carry on its business exactly like a private commercial company; while in Japan, France, and Germany the government has the right to interfere with the election of the directors of banks and with their business to a certain extent. In England the government allows a great deal of freedom to its banks and no fraud is committed by them. This is because, among other reasons, they have public opinion to exercise strict watch over them. But as public opinion, properly so-called, is still weak in China to-day, the English method cannot be adopted. The government and the bank are at present too closely

connected, the latter forming almost a department of the government itself. In prescribing a proper dose for the disease, the first step to be taken is to break the connection first and then effect some reorganization in the bank.

“It is quite obvious that the formation of the Bank of China, as well as its methods of doing business, etc., are all copied from those of Japan. The Chinese political situation changes very quickly and the various Ministers of the government are being constantly changed. When a new Minister takes up his post he invariably takes on his trustworthy men, and consequently the positions of the responsible members of the bank depend entirely on the whim of the new Minister of Finance, while the governor and vice governor cannot make their positions secure unless they court the favor of the Minister of Finance. Considering what great responsibilities are on the shoulders of the governor and vice governor of a bank which controls the finances of the whole country, the fact that they are entirely at the will of the government is a matter of serious consequence to the nation.

“I consider that the rules regarding the appointment of governor and vice governor by the government and the election of the board of directors from the shareholders should be amended. That the governor, vice governor, directors, and supervisors are to be elected by the shareholders, is one of the fundamental reforms to be made by the bank.”

### 32. Chinese Banks to Maintain Joint Reserve Fund\*

The Shanghai Bankers' Association, which includes the principal Chinese banks in Shanghai, has just issued a set of regulations providing for a joint reserve fund to be maintained by all the banks as a protection against any emergency in any of the banks. The sum of Tls. 300,000 contributed by the various banks has been paid into the Bank of China as trustee and placed in its vaults.

The members of the association represented in the fund and the amount they have paid in follow:

	Sh. Tls.
Bank of China . . . . .	60,000
Bank of Communications . . . . .	60,000
National Commercial Bank, Ltd. . . . .	30,000
Chekiang Industrial Bank, Ltd. . . . .	20,000
Shanghai Commercial and Savings Bank, Ltd. . . . .	20,000
Salt Industrial Bank . . . . .	10,000
Chung Foo Union Bank, Ltd. . . . .	20,000
Young Bros. Banking Corporation . . . . .	20,000
Ningpo Commercial Bank, Ltd. . . . .	20,000
Chung Hua Commercial and Savings Bank, Ltd. . . . .	10,000
Bank of Canton, Ltd. . . . .	10,000
King Cheng Banking Corporation . . . . .	20,000

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\*From *The China Press*, Shanghai, Tuesday, March 11, 1919.

The regulations governing the fund follow:

1. These regulations are drawn up according to the resolutions passed at the general meeting held at this Association on the 30th November, 1918.

2. This reserve fund is constituted of respective amounts agreed to by the Associated Banks and deposited in cash jointly with the bank in trust for safe custody; hence it is termed Joint Reserve Fund.

3. The object of raising this Reserve Fund is to provide for unexpected necessity of any of the Associated Banks. The fund must be reserved in cash and therefore bears no interest.

4. The total amount of Reserve Fund deposited is Shanghai Tls. 300,000 (Shanghai Taels three hundred thousand only), for the time being.

5. The respective amounts for deposit in the Reserve Fund should be agreed to by the banks themselves, but the minimum in any case should not be less than Shanghai Taels 10,000 (Shanghai Taels ten thousand only).

6. A Bank in Trust of the Reserve Fund should be annually elected among the Associated Banks at the general meeting for taking the responsibility on behalf of the Association, the term being one year, which may be renewed upon re-election.

7. With the exception of representatives of the Bank in Trust, the Associated Banks should half-yearly elect two auditors for examining jointly with the Bank in Trust the fund in the vault at least

twice a month. Examination may take place whenever considered to be necessary by the majority of the Associated Banks.

8. The Bank in Trust should devise means to erect iron rails in the vault, forming a special portion for the storage of the fund in cash, which should be under lock and key with the label of "Reserve Fund of the Shanghai Bankers' Association" attached to the rails. One set of the keys should be kept by the Bank in Trust and the duplicate by the auditors.

9. When the amount of Reserve Fund has been deposited in full, the Association should petition the Ministry of Finance and also report to the Chinese General Chamber of Commerce to put it on record that this fund is the joint property of the Associated Banks, and may be removed whenever any emergency happens to the Bank in Trust.

10. In case any of the Associated Banks is affected by the money market or by other particular conditions and needs assistance to meet difficulties, loans may be advanced by the Association against suitable securities. The amount to be advanced over and above the amount originally deposited by the bank, and its term should be resolved by a motion of two-thirds of the Associated Banks.

11. If there is a panic in the market, this Association may convene a general meeting to discuss measures for maintenance. But the native banks or shops applying

for loans from the Association should send in suitable securities, the amount, term, and rate of interest to be fixed in each case.

12. Upon receipt by the Bank in Trust of cash deposit of each Associated Bank an official certificate should be issued by the Shanghai Bankers' Association to be held by the bank of deposit. Such deposit certificate can be valid only when countersigned by both the Chairman of the Association and the Bank in Trust.

13. The aforesaid deposit certificate may be used as security among the Associated Banks, but not to be cashed at any time.

14. The Reserve Fund, once deposited, should not be freely withdrawn or reduced. In case of necessity, such changes may be effected only when passed by the Associated Banks in a body.

15. If any deposit certificate is robbed or stolen or lost, the Bank in Trust and this Association should at once be notified by a formal letter for record, at the same time advertisements inserted in not less than two leading papers in Chinese and two in foreign language. If no complications arise on the expiration of thirty days, a new certificate will be issued to the bank concerned upon application by letter.

16. These regulations shall come to force when resolved at the general meeting. Alterations and amendments may be discussed and effected therein when the Associated Banks are in full session.

### 33. The History of the Hongkong and Shanghai Banking Corporation\*

The bank was founded on the 6th of August, 1864, when a meeting of interested merchants and others was held in Hongkong at which the following resolution was passed:

“That the persons present do form a Provisional Committee for carrying out the object of the following prospectus:

THE HONGKONG AND SHANGHAI BANKING COMPANY,  
LIMITED

Capital \$5,000,000

In 20,000 shares of \$250 each

To be incorporated by Charter

*Provisional Committee*

Hon. F. Chomley, Esq., (Messrs. Dent and Company.)  
A. F. Heard, Esq., (Messrs. Aug. Heard and Company.)  
T. Sutherland, Esq., (Superintendent, P. & O. S. N. Co.)  
G. F. Maclean, Esq., (Messrs. Lyall Hill & Company.)  
Douglas Lapraik, Esq.,  
W. Nissen, Esq., (Messrs. Siemssen & Company.)  
H. B. Semann, Esq., (Messrs. Gilman & Company.)  
W. Schmidt, Esq., (Messrs. Fletcher & Company.)  
A. Sassoon, Esq., (Messrs. D. Sassoon Sons & Company.)

\*From “The Encyclopaedia Sinica,” edited by Samuel Couling, Shanghai, 1917, pp. 235-37. Reprinted by permission.



Robert Brand, Esq., (Messrs. Smith Kennedy & Co.)  
Pallanjee Framjee, Esq.,  
W. Adamson, Esq., (Messrs. Borneo Co., Ltd.)  
G. S. Helland, Esq., (Messrs. I. Bund & Company.)  
Rustonjee Dhimjeeshaw.

Counsel,

E. H. Pollard, Esq.

“The scheme of a local bank for this colony with branches at the most important places in China has been in contemplation for a very long period. The local and foreign trade in Hongkong and at the open ports in China and Japan has increased so rapidly within the last few years that additional Banking facilities are felt to be required. The Banks now in China being only branches of Corporations whose headquarters are in England or India, and which were formed chiefly with the view of carrying on exchange operations between those countries and China, are scarcely in a position to deal satisfactorily with the local trade which has become so much more extensive and varied than in former years. This deficiency the Hongkong and Shanghai Banking Company will supply and will in fact assume the same position with relation to this Colony as the Presidency Banks in India or the Banks of Australia in their respective localities.

“The establishment of a Mint in Hongkong providing an adequate supply of proper currency will under a local banking medium be essential to carry out its operations and the almost certain disappearance of

the existing compradoric system so far as money is concerned will also ensure banks becoming in course of time the exclusive medium for the transaction of the monetary operations connected with trade. . . .

“The Bank will commence operations simultaneously in Hongkong and Shanghai. . . . As circumstances render it advisable the Bank will establish branches at other places.”

The Hongkong and Shanghai Banking Company, Limited, commenced business in April, 1865, with a capital of \$2,500,000, being 20,000 shares of \$250 each, \$125 paid up. The Head Office was established in Hongkong and the first Chief Manager was Mr. Victor Kresser, a Frenchman. The first Manager of the Shanghai Branch was Mr. David McLean.

In 1866 the Bank was incorporated under a Hongkong Government Ordinance and the title was altered to The Hongkong and Shanghai Banking Corporation.

The shares of \$250 of which \$125 was paid up were subsequently changed to \$125 shares with an uncalled liability of \$125.

The Capital of the Bank was increased at various times from the original 20,000 shares to 120,000 shares of \$125=\$15 millions, at which it stands at the present time (1916) with Reserves of:—

\$18,000,000 in Silver,

\$15,000,000 in Sterling @ 2/ = £1,500,000 invested  
in the British Government 4 1/2 % War Loan.

and in addition to above Reserves:—

\$ 250,000 Marine Insurance Account,  
\$3,027,000 carried forward in Profit and Loss  
Account.

The following are the increases of capital that have taken place:—

Original Capital 20,000 shares . . .	\$ 2,500,000.
Increased in 1866 to 40,000 shares, but not fully paid up until 1872 when the Capital was . . . . .	\$ 5,000,000.
Increased in 1883 to 60,000 shares . .	\$ 7,500,000.
Increased in 1890 to 80,000 shares . .	\$10,000,000.
Increased in 1907 to 120,000 shares . .	\$15,000,000.

The Dividend on shares is paid on a sterling basis, and during recent years the distribution has been £2.3/- per share half-yearly with a bonus of 5/- at the end of the year, making £4.11/- per share per annum, equivalent to nearly 36 % per annum on the capital, taking exchange at 2/- to the dollar.

At the start the Bank had offices only at Hongkong, Shanghai and London, but a Branch was opened in Japan in 1866 and shortly afterwards offices were established in the principal ports in China as well as extending to India. A very fine building was erected a few years ago for the London Branch.

The Bank steadily expanded its activities to various parts of the world, and at the present time it has 34 different offices established at:—

Amoy	London
Bangkok	Lyons
Batavia	Malacca
Bombay	Manila
Calcutta	Nagasaki
Canton	New York
Colombo	Peking
Dalny	Penang
Foochow	Rangoon
Hankow	Saigon
Harbin	San Francisco
Hongkew (Shanghai)	Shanghai
Ipoh	Singapore
Iloilo	Sourabaya
Johore	Tientsin
Kobe	Tsingtau
Kuala Lumpur	Yokohama

During the period 1870 to 1875 the Bank had a series of lean years, when its fortunes seemed at the lowest, but from 1876 onwards its position steadily improved. From that time, the prosperity of the Hongkong and Shanghai Bank was assured, and has continued unbroken; a material contributing element in this success being undoubtedly the fact that its Head Office and Directorate were domiciled in Hongkong, and its policy directed by men thoroughly acquainted with local needs and conditions.

Apart from the services the Hongkong and Shanghai Banking Corporation has rendered to British trade

generally in the Far East, its name has been most prominent in connection with Chinese Government Loans, of which it was the pioneer, and of which it continues to be the most representative channel.

The first Chinese Government Loan was arranged with the Foochow authorities and was floated in 1875 for £539,748.18/—(*i.e.* Tls. 1,720,000 or \$2,398,884) of which in January, 1875, £352,700 of the Bonds were offered to the public. Interest was at the rate of 8% per annum, the issue price was £95 with exchange 4/1 1/4 per dollar.

During the ten years which followed, the Bank issued six loans for the Chinese Government, both in silver and in gold, for comparatively small amounts. In 1894 and 1895, during the Chinese-Japanese War, the Bank issued two loans, one in silver for Tls. 10,900,000, and the other in gold for £3,000,000. The agreement for the latter loan was signed at the Tsungli Yamen on Chinese New Year's Day 1895, when the official seal of the Ministry had to be brought out for the purpose, an unprecedented relaxation of immemorial Chinese tradition.

In 1895 the Hongkong and Shanghai Banking Corporation, with the approval of the British Foreign Office, entered into an agreement with the Deutsch-Asiatische Bank, representing a group of German financial houses headed by the Disconto-Gesellschaft, for the joint financing of Chinese Government Loans in London and Berlin; and under this arrangement the Chinese Government 5% Gold Loan of 1896 and the 4 1/2% Gold Loan of 1898, each for £16,000,000, were negotiated and

issued jointly by the two Banks, the proceeds being applied to the payment of the Chinese indemnity exacted by Japan after the war.

In 1898 when a movement began for the financing and construction of railways in China, the Bank, in conjunction with Messrs. Jardine, Matheson and Company, formed the affiliated Company known as the British and Chinese Corporation, Ltd., for the financing and management of railways and other industrial enterprises, and its name has since become widely known in connection with railway development in China. Its formation was followed later by the creation of a similar affiliated company known as the Chinese Central Railways, which included important French interests.

In 1909 the agreement of 1895 between the Hongkong and Shanghai Bank and the Deutsch-Asiatische Bank for the financing of Chinese Government Loans was extended to admit a French group represented by the Banque de l'Indo-Chine, the combination being enlarged later by the admission successively of American, Russian and Japanese groups, represented respectively by Messrs. J. P. Morgan and Company of New York, the Russo-Asiatic Bank, and the Yokohama Specie Bank. It was this consortium, known as the "Sextuple Group," which in 1913 negotiated with the Chinese Government the Reorganization Loan for £25,000,000; the American group, for political reasons, dropping out of the negotiations on the eve of their conclusion, and leaving the British, German, French, Russian and Japanese groups as the final signatories.

## CHAPTER XII

### INTERNATIONAL TRADE

#### INTRODUCTION

To the individual business man all trade consists of the exchange of goods for money. This is true of international trade as well as of domestic trade. We know that in domestic trade the money is a means of bringing about the exchange of goods and services for goods and services. We know that the use of money enables the division of labor to work itself out within a country and that this division of labor is one of the chief causes of the plentiful production of goods within a country.

These same principles that underlie domestic trade are applicable to international trade as well. International trade is, like domestic trade, the exchange of goods and services for goods and services. The payments in international trade are a means of bringing about this exchange and the economic advantage that is gained from international trade rests upon the extension of the division of labor.

The economic advantage that arises from trade between Central China and North China is of the same sort as the advantage that arises from trade between China and the United States or England. These general principles of both foreign and domestic trade are

frequently overlooked, if they are not completely forgotten, by those who speak or write upon the subject of international trade.

Though it is true that the principles are the same, nevertheless it is also true that international trade calls for special and separate study.

The subject of value needs special consideration because labor and capital do not move from country to country as freely as they do from place to place or from industry to industry within a country. This immobility rests upon differences in language, customs and race, among other things.

The subject of money and the means of payment in international trade calls for special treatment. Here, also, it is true that we have conditions in domestic trade somewhat similar to those in foreign trade. Rates of exchange are quoted in Shanghai on Tientsin and Hankow and these rates vary from day to day. In foreign trade, however, we must consider differences in currency systems, in banking practices and in business customs that make the subject of exchange one of complex and confusing details. In the case of China there is the added difficulty that China presents unusually great differences in these respects from the chief trading countries of the world.

A spirit of nationalism, accompanied, as it usually is, by prejudices, causes people to look upon trade with foreign countries in a way that differs from their view of domestic trade. This spirit is behind many of the



restrictions placed upon international trade. It is undoubtedly true that a spirit of nationalism is growing in China. This gives an added importance to the study of international trade and especially to the study of the controversy over protection.

Some of the readings that follow have been selected to show the difficulties of financing trade. These difficulties are greater in the trade of China than in the trade of most other countries since China is, for purposes of international trade, a silver-using country while most of the countries with whom she trades use gold. Exchange between countries that use different metals for standard money or between countries one of which uses inconvertible paper money has been called dislocated exchange. This name brings out the important fact that there is no simple and direct way of settling balances as there is between two gold-using countries, for example. The first of the readings enables the student to see the working of exchange as it takes place in Shanghai. It furnishes an example of the rates as they appeared on a certain day.

The selection that follows shows the fallacy of using foreign trade as a measure of prosperity. This, in turn, is followed by a reading that shows two different opinions as to the significance of an "unfavorable balance" of trade. The student must not leave this subject of international trade behind him until he is certain in his own mind that the balance of imports and exports does not show the economic effects of

international trade upon a country. No better illustration of this can be given than a comparison of England and China from the point of view of international trade. For years England has had larger merchandise imports than exports, measured in terms of dollars and cents. For years China has been in the same condition. Any attempt to explain these two balances will cause the student to see the importance of other factors in the foreign trade of a country besides the merchandise exports and imports. The next reading, from H. B. Morse, shows the way in which one shrewd observer has calculated the balance of China's debits and credits. This reading brings in the factors that are ordinarily neglected because they are not so easily seen.

Finally, there is a chapter from Dr. Chu's work on the tariff problem in China, which will, it is hoped, lead to discussion and debate upon the subject of a protective tariff policy for China. Such a discussion brings out the principles of international trade in the clearest possible way.

There is no discussion of tariff autonomy and of the problems that are of current importance in China, because the purpose of this chapter is to bring out the general principles of international trade without entering into any discussion of details.

### 34. Shanghai Exchange Quotations and What They Mean\*

*By G. Passeri*

#### RATES OF EXCHANGE

SHANGHAI, Saturday, 19th October, 1918

1—BAR SILVER Spot.....	49½	=	4/10½
2—DO. Forward .....	no market		
3—MEX. DOLLARS.....	73.825		
4—NATIVE INTEREST.....	16		

*H. & S. B. C. Opening quotations 9.30 a.m.*

#### 5—Banks' Selling Rates

6—LONDON .....	T/T.....	5/1
7— „ .....	Demand .....	5/1½
8— „ .....	4 m/s.....	5/1½
9—INDIA .....	T/T .....	338½
10—FRANCE .....	T/T .....	666
11—AMERICA .....	T/T .....	121
12—HONGKONG.....	T/T .....	68
13—JAPAN .....	T/T .....	44½
14—BATAVIA .....	T/T .....	277
15—STRAITS.....	T/T .....	46

#### 16—Banks' Buying Rates

17—LONDON .....	4 m/s Credits .....	5/3½
18— „ .....	4 m/s Docs.....	5/3½
19— „ .....	6 m/s Credits .....	5/4
20— „ .....	6 m/s Docs.....	
21—FRANCE .....	4 m/s.....	697
22—AMERICA .....	4 m/s L/c.....	124½
23— „ .....	Docs .....	125½

EXCHANGE BROKERS' ASSOCIATION, SHANGHAI

\*From an article on the "Financing of Import and Export Trade with China" by G. Passeri, Financial Adviser to the Bank of China, in *The Far Eastern Review*, Shanghai, February, 1919, Vol. XV, No. 2. Reprinted by permission.

The relation of gold and silver is based on the comparative prices of the two metals, and in our particular case on the price in gold (pence) at which the silver is quoted in London. From this, by a series of calculations that are not interesting and which I omit in consequence, is derived the so-called T. T. rate on London, or, in other words, the rate at which the local banks will sell a telegraphic transfer on that market. This rate is expressed in shillings, pence, and fractions of a penny, these being rather peculiar, since in fact it would be much easier and probably more correct mathematically to express it in taels and decimals of taels.

As an illustration, when one is told that the T. T. rate on London is  $4/8\frac{3}{4}$  it will mean that a local bank is prepared to sell T. T. on London giving for every tael 4 shillings 8 pence and 3 farthings. From this rate are derived all the other different rates of exchange with foreign countries, which the Exchange Brokers' Association publishes every morning at 9.30. After the receipt of the London telegram the quotations are printed on a slip that is sent round to the different banks, merchants, etc., in the place. Being an accepted custom for the Hongkong & Shanghai Banking Corporation to give out these rates one will find at the top of the slip the mention H. & S. B. C. Opening quotation. I give a specimen of these slips and will analyse it in detail.

For the sake of convenience I place on the left-hand side progressive numbers so that I can refer to them in the course of this explanation.

(1) *Bar Silver Spot 49½ equal to 4/10½.*

This is the so-called parity of silver, and it means that—with the charges as in normal times—silver being 49½ pence per ounce troy in London, the price in Shanghai per Shanghai Tael would be 4 shillings 10 pence and two farthings.

(2) *Bar Silver Forward—no market.*

In normal times a quotation is given for forward silver delivery in two months, but it is omitted at present owing to prevailing circumstances.

(3) *Mexican Dollars 73.825.*

This is the market rate of Mexican Dollars into Shanghai Taels, and it means that Shanghai Tls. 73.825 are equal to Mexican Dollars 100.

(4) *Native Interest 16.*

This rate, which is an indication of the state of the money market, means that the native banks pay interest at the rate of Tls. 16 per Tls. 1,000 per day (5.84 per cent per annum).

(5) *Bank's Selling Rates.*

This means the rates at which the banks will sell gold.

(6) *London T. T. 5/1.*

This means that for one Shanghai Tael the Bank will sell 5 shillings and 1 penny, by telegraph, payable in London, the same day. This quotation is taken from the above parity (1), and in normal times it should be at little variance with the same, the small difference then present being due to demand and supply, but as

the war has created abnormal conditions everywhere we have not escaped its consequences out here.

(7) *London Demand 5/1 $\frac{1}{4}$ .*

The  $\frac{1}{4}$ d. difference between the T. T. rate and the demand rate is due to the fact that owing to the difficulties of communications existing at the present time it takes longer to cash a demand draft at home than it did in pre-war times when the difference was only 1/8d., representing the interest of one month.

(8) *London 4 months 5/1 $\frac{1}{2}$ .*

The same remarks as above apply here only for the longer period of four months.

(9), (10), (11), (13), and (14): The rates on *India, France, America, Japan, and Batavia* are all based on the London T. T. rate of 5/1d., and the respective cross rates between India and London, France and London, New York and London, etc., are telegraphed out here at every important change.

The actual meaning of these rates is the following:

India—Rupees 338 $\frac{3}{4}$	.	equal Tls. 100
France—Francs 666	.	„ „ 100
America—Gold \$121	.	„ „ 100
Japan—Tls. 44 $\frac{1}{2}$	.	„ Yen. 100
Batavia—Florins 277	.	„ Tls. 100.

(12) *Hongkong T. T. 68.*

This rate indicates that Shanghai Taels 68 are equivalent to Hongkong \$100.

(15) *Straits T. T. 46.*

Meaning that 46 Shanghai Taels are equivalent to Singapore Dollars 100.

(16) *Banks' Buying Rate.*

This means the rate at which the banks will buy gold.

(17), (18), (19), and (20): The various rates on London are the rates at which the bank will buy bills on that port either on open credits or documentary bills at 4 and 6 months' sight.

(21) *France 4 months 697.*

The same remarks apply here as above.

(22) and (23) *America 4 months credits and documents.*

The same remarks as above apply.

I have mentioned already that these rates are the opening rates of the Hongkong & Shanghai Banking Corporation, but it does not follow that these are the rates at which other banks will sell or buy, the same being dependent upon their own position and other factors that will make any one of the banks operating on this market a good buyer or a good seller as the case may be. Nor are these the rates that the Hongkong & Shanghai Banking Corporation itself will quote during the whole day, as demand for T. T. or supply of bills may be so preponderant as to force the bank to alter its rates. Part of the mechanism of exchange, as it works not only in Shanghai but in other treaty ports where the foreign banks have their branches, is the telegraphing of the Shanghai T. T. rates on London every morning to

Tientsin, Hankow, Peking, etc., where they are converted into local rates by applying the Shanghai-Tientsin, Shanghai-Hankow, Shanghai-Peking, etc., tael cross rates.

### 35. External Trade as a Measure of Prosperity\*

External trade is not necessarily a measure of the prosperity of a country. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. In this regard it is interesting to contrast the trade per head of, say, Belgium, New

\*From the Official Year Book of the Commonwealth of Australia, statistics for period 1901-1917, No. 11, p. 598.



Zealand, and the United States of America. Of all the countries mentioned in the foregoing table, the trade per unit of population for any year was greatest in New Zealand (£53 13s 4d.), with Belgium next (£48 18s 1d. in 1912), whereas for the United States the trade was only £13 9s 11d. per inhabitant. Belgium and New Zealand represent conditions almost directly opposite to one another in the scheme of industrial development, yet the trade per head of each is abnormally high in comparison with that of most other countries. The large trade of Belgium was obtained by the export of the products of highly organized manufacturing industries, based on the supplies of coal and iron within the country, in exchange for the raw materials for those industries and for food. In New Zealand the circumstances are reversed, inasmuch as in that country the energies of the people are mainly applied to primary industries, the produce of which, being largely in excess of local requirements, is exported in exchange for manufactured goods. The relatively small trade per head of population of the United States, as compared with Belgium or New Zealand, does not indicate that the people of the United States are in an inferior condition, but rather that their industries are more nearly balanced, with the result that a larger proportion of the requirements of the nation is supplied from within its own territory, and consequently a smaller foreign trade is sufficient to supply the few remaining wants of the people, or, in other words, it indicates that

as a nation the United States is more nearly self-contained.

### 36. Two Opinions on China's "Balance of Trade"

The two opinions that are given below speak for themselves. They proceed, from the assumption that the "balance of trade" is settled by the movement of treasure, to widely different conclusions. The first is from *The Chinese Repository*, vol. ii, No. 8, for December, 1833. It appeared with other items of news under the "Journal of Occurrences."

"From the province of Chekiang a representation has been made to the Emperor stating that sycee silver was exported from the country for the purchase of opium, etc., but that no law existed for the punishment of the offense. . . . By His Majesty's order the Criminal Board deliberated on the subject and decided that the exportation of 'yellow gold and white silver' should be punished in the same manner as the clandestine exportation of rice or other grains. The board recommended that the trade with foreigners should be in the way of barter, goods for goods, but in the term white silver they would not include 'foreign money' or dollars; since the dollars were imported they might also be exported without detriment to the metals of the country.

"Against this decision Hwang-tseo-tsze, censor of the province of Fokien, has protested. He says: 'The people are pleased with dollars for their convenience in

counting; they are of value also for the facility of transport,'—on these accounts dollars are made from sycee silver by crafty merchants in Canton, Fokien, etc.,—and thus may be sent abroad. He begs the Emperor to prohibit by penalty the coining of dollars. Otherwise the treasure of the land will go forth to feed the cupidity of barbarians and injure China for myriads of years. The export of copper and iron affects only military weapons, but that of silver touches the vitals of the empire."

In marked contrast to this opinion is that of Tan Sze-tong as shown in his book "Benevolence." Tan was one of the councilors of the Emperor in 1898 and knowingly sacrificed his life, hoping to stimulate the progress of the reform movement in China. Dr. Reinsch, in "Intellectual and Political Currents in the Far East," gives this version of Tan's opinion: "Though the balance of trade should be against China it is still to her advantage to keep up the trade, for in that case the Westerners would supply economic wants which must be satisfied and would receive in return only money, which by itself cannot appease hunger nor quench thirst."

### 37. The "Balance of Trade" for China\*

*By H. B. Morse*

An essential part of any study of the foreign trade of China is the consideration of the means by which the

\*From "The Trade and Administration of the Chinese Empire" by Hosea Ballou Morse; Shanghai, Kelly and Walsh, 1908. Reprinted by permission.

balance is struck between China and the outer world. Up to 1895 the Empire had practically no foreign debt. As the result of the war with Japan which ended in that year a foreign debt of over £50,000,000 was incurred; and the indemnities to be paid to foreign powers in settlement of the military operations necessitated by the Boxer movement of 1900 added to the foreign obligations a further sum of £67,500,000; the annual charge for obligations incurred since 1895 is, according to the exchange, between Tls. 42,000,000 and Tls. 45,000,000. The natural commercial effect of the trade of the country would be to increase the quantity of commodities required to be exported to maintain commercial equilibrium; but, in fact, the tendency has been in the direction of an increase of imports. Considering merchandise only, passing thru the various Custom Houses, imports exceeded exports in 1901 by 27 per cent, in 1902 by 28 per cent, and in 1903 by 31 per cent; in 1904 the excess increased to 43 per cent, and in 1905 to no less than 97 per cent, but in these two years the greatly increased import trade, apart from any increased absorptive power by the people, was largely financed by remittances to maintain the Russian and Japanese armies in the field, rendering the conditions of trade abnormal. The year 1903 must then be taken as the last normal year. Outside the maritime Customs, statistics are unknown in China, and all that can be done in seeking information is to adopt a reasonable working hypothesis, and on it to base a conjecture.

With this serious limitation, an attempt has been made to investigate the different liabilities and assets of international indebtedness as for 1903.

*Liabilities.*—The first is the visible liability of merchandise imported, valued at Tls. 310,453,428 to which must be added bullion and coin imported, Tls. 37,000,000; in the last is included an estimated sum of Tls. 10,000,000 brought back in cash in the pockets of returning emigrants, but the treasure movement is obscured by the fact that China must return as foreign all movements to and from Hongkong, the financial center for South China. Then we have Tls. 44,210,000, the annual charge for loans and indemnities for 1903 at the exchange of that year. For invisible liabilities it is estimated that Tls. 4,320,000 were spent for the maintenance of Chinese legations, consulates, and students abroad; and that the net profits of foreign residents, merchants, and others, and of foreign shipping and insurance companies amounted to Tls. 22,750,000. A further sum of Tls. 5,000,000 is added as the possible value of war material not included in merchandise. The total so estimated is Tls. 423,733,428.

*Assets.*—The merchandise exported was Tls. 236,-205,162, and bullion and coin Tls. 33,046,000 including as before shipments to Hongkong. Then there is an item of unrecorded trade across the land frontier, which on the authority of the Russian statistics of trade with China must be put at over Tls. 20,000,000 excess of exports. The money and material provided from abroad

for the development of railways and mines, a future but not a present liability of China, is estimated at Tls. 27,000,000. The sums required to be remitted for the maintenance of foreign legations and consulates, foreign garrisons and navies, for the maintenance and repairs of foreign shipping, for the upkeep of foreign missions, hospitals and schools, and for the expenditure by foreign travellers, were considered in the light of all the information obtainable, and were estimated at Tls. 51,500,000. Finally, there remains China's most important invisible asset, her export of brawn and brains in the emigration of a portion of her redundant population, whether as traders or as laborers, remitting to their homes the fruit of their labor in an annual sum which, on the lowest possible estimate, is Tls. 73,000,000. The total assets so estimated amount to Tls. 440,741,162.

### 38. A Commercial Policy for China\*

*By Chin Chu*

1. Considerations in Favor of Protection. *Arguments with special reference to conditions in China.* The real economic policy of China ought to be directed toward an increase of national wealth and an approach to industrial independence. In order to realize such

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\*From "The Tariff Problem in China," by Chin Chu, Ph. D., Columbia University Studies in History, Economics and Public Law, Vol. LXXII, No. 2; New York, 1916. Reprinted by permission.

aims much can be said in favor of protection. In the first place China is in a transitional period from a local to a national economy, the entire government as well as the tax system being still lacking in uniformity and efficiency. Anything which can arouse the national spirit and secure national unity is much to be desired. A protective tariff can result in a long step in that direction. Secondly there are many young industries in China which must overcome the handicap of high cost and other difficulties in the beginning. This alone would be a sufficient ground for the adoption of a protective tariff, as is generally admitted by most economists. Thirdly, China is an old country full of traditions, the failure to start many new industries is due to the inertia of the people. According to Professor Taussig this is a condition that requires protection.\* Fourthly, on the other hand, in China as a new country in which few modern industries have been developed, foreign competition is so severe that it kills the growth of any native industry. Under such conditions even John Stuart Mill justifies a protective tariff.† Fifthly, China's uniform five per cent tariff has so little effect that China is practically a free trade country, and this policy seems to have been detrimental to her industries. Finally it

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\*F. W. Taussig, "Tariff History of the United States," p. 5. [Professor Taussig's language does not justify the use of the word "requires," and he is speaking of a condition in the United States, not of the justification for protection in general.—Ed.]

†J. S. Mill, "Principles of Political Economy," bk. v, ch. x, sec. 1.

must be remembered that for a century or so most of the advanced nations have been protecting their own industries by high tariff walls. How then is a development of young industries in a new country like China possible without protection? The arguments would therefore all seem to point to a protective policy for China.

The arguments mentioned above for tariff protection, however, are more specious than real. For the wise policy for China at present is not to adjust her political and social conditions to the industrial system, but to adjust her industrial development to the changing political and social conditions. The former is retrogression; the latter, progress. All growth spells pain; all progress involves cost. Temporary sacrifices must be made in order to secure ultimate expansion. In China the industrial revolution has come together with the political and social revolutions. The industrial revolution in China, however, is different from that of the West. The main factor in the industrial revolution in the West has been the change in the methods of production, while in China the conspicuous feature of the revolution is the change in the nature of consumption. To facilitate this revolution in China therefore the policy of free trade rather than that of restriction will in the long run prove most advantageous to the nation at large. There are consequently several erroneous ideas in connection with the agitation of mere tariff protection in China.



The arguments for protection are one-sided. Those who advocate tariff protection in China have neglected the following points: In the first place, inasmuch as the protective tariff operates at the expense of the consumers, the restrictive policy merely tends to retard industries. The destructive effect of the Spanish tariff in the last century on the general prosperity of that country is well known. For the protective policy checks imports and raises their price. This loss to the nation cannot be compensated by the increase of governmental revenue.

In the second place, the secret of the industrial activities of a people lies in their wants and desires. With the complacent contentedness of primitive people, modern civilization can never be attained. The industrial revolution in China is bound to create new wants and to change the standard of living. In so far as these modern improvements cheapen the necessities of life and add to the simple comforts, they will do nothing but good. The stimulus created by the new desires will cause new activities among the people. Under such circumstances the government ought to encourage foreign imports so as to rouse in the people new desires; and at the same time the government should strive to supervise and foster the infant industries at home in order ultimately to secure economic independence.

In the third place, for the starting of new industries in China, general knowledge, scientific experimentation

and the introduction of foreign skilled-labor, foreign experts and foreign capital are far more important than the adoption of tariff protection or any other restrictive method. In the fourth place, what China most needs is in the direction of facilitation rather than restriction. Under the present backward conditions of transportation and communication, the deplorable system of internal taxation, the complicated methods of exchange and currency and the lack of banking facilities, no considerable development of industry and commerce is possible. In the presence of those obstacles, a prohibitive policy will simply make things go from bad to worse. Even after the removal of these obstacles the government will be advised in going slowly with the adoption of any sweeping policy of protection in the near future.

In the fifth place, the development of new industries in China depends to a large extent on her agricultural products. But protection is not needed by agriculture for the reason that this industry is affected far more by the physical factors of soil and climate than by acquired skill. With a rich soil and the varieties of raw produce indigenous to China, agricultural protection would be out of place. In other words, the protective policy as a whole should not be the goal of any far-sighted statesman in China, even though governmental encouragement and proper supervision is sadly needed in particular instances.

4. What Should Be China's Policy. *Practicable Suggestions.* In some respects China resembles Japan;

in others, the United States. But on the whole she is different from either country. China is like Japan of several years ago in undeveloped state, stagnant condition, and low standard of skill, of wants, and therefore of activity among the people. If Japan has been able to extricate herself from those conditions in so short a time without tariff protection, why should not China do the same, especially as she is in a comparatively advantageous position on account of her size, her rich resources in natural and mineral products, and her numerous population?

China is similar to the United States in the latter respects. If the development of industries in the United States is due not to the tariff but to the rich soil and mineral resources, the numerous and enterprising people, and the immense area of the country, the protective policy for China should be unnecessary. In fact it seems even to be unreasonable as she needs foreign help to remove the general stagnation and as her domestic producers require foreign competition to quicken their activities. If these considerations are correct China's policy should be directed to the following objects:

1. *The restoration of the tariff right.* It is an unfortunate incident that all tariff stipulations in China governing not only imports but exports have been inserted in the treaties. The evil results of such conventional tariffs have been sufficiently discussed in the previous chapters. Before or after the restoration of that right, however, China should refrain from trying

to adopt any general protective policy, although the duties should be somewhat increased mainly for revenue purposes, and the uniform tariff schedule should be modified in accordance with the nature and the quality of goods.

2. *The removal of every obstacle to industry and commerce.* China is a country of vast potential though not realized wealth. She has a most fertile soil, immense mineral resources, a benign climate, and a hard-working and frugal population. By striking off all existing fetters, that is, by opening roads and especially railroads, reforming the currency, and preserving and deepening the waterways, there is no reason why China cannot become a prosperous country. Above all the entire fiscal system, including the relation between the central and provincial governments, the collection and incidence of taxation, and so on, must be thoroughly reorganized before there can be real progress.

3. *The government and supervision of new industries.* Young industries can hardly make a good and rapid start without government support. In the absence of government supervision, even some of the old staple industries have deteriorated through the ignorance of the people. Hence, in the first place, the government must introduce the scientific culture of tea, cotton, silk, and so on, and prohibit adulteration and other malpractices, which have been one of the causes of the decrease in their trade. In the second place, it must spread technical information, open schools for mechanical

education and encourage inventions of different sorts so that the people will gradually be able to initiate the new lines of industry. And in the third place, the government must take an actual part in fostering some of the more important industries. According to a well-experienced and highly learned English writer, A. J. Moore-Bennet,\* "Of the seventy-three million pounds' worth of manufactured goods imported in 1912, China could . . . manufacture at least fifty per cent of the goods she now imports cheaper than any other country in the world." But the development of many of those industries depends upon the whole-hearted support of the government and the enactment of laws encouraging the introduction of foreign capital and experts.

4. *Special favors for particular industries.* If an infant industry is in any case to be established, the bounty seems preferable to protection. A bounty differs from protection in several respects. (1) While the tariff tends to raise the price of the favored goods, the government subsidy lowers it. (2) The bounty does not tax the foreign competition, but enables the domestic producer to meet it. (3) In the case of a bounty, the burden falls upon the taxpayers as such rather than upon consumers. This distinction between the two systems will be of great importance in China as the

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\*An article on "The Industrial Opportunities of China," by Arthur J. Moore-Bennet, C. E., F. R. G. S., reprinted by *The National Review*, Shanghai, Feb. 20 *et seq.*, 1915.

standard of living is so low and the poverty of the country so great.

5. *The adoption of a progressive and far-sighted policy.* This is the chief need in China. It was thought in the beginning that foreign trade was only a benefit to foreigners, although unhappily and partly due to the narrow policies of the officials, the trade has certainly not proved a benefit to the country. The government must tear down the old systems which check the development and must sacrifice temporary gains for the sake of ultimate prosperity. Export duties should be reduced and abandoned as far as possible. The importation of foreign capital and skill must at all cost be encouraged. The foreigners in China must also be induced to give up their special privileges so as to remove the existing evils, to render possible industrial development in China and finally to increase the purchasing power of the Chinese people. For a trade that depends for its profits on the inability of a people to develop their own resources cannot be counted upon as stable and permanent.

## CHAPTER XIII

### DISTRIBUTION

#### INTRODUCTION

Economists make use of common words but give them definite and precise meaning. The word "distribution" is an example. We speak of the distribution of mail matter through the postal system. We speak of railways and waterways as agencies for the distribution of goods. In such cases we are not using the word as it is used in the science of economics.

The economist uses the name "distribution" for the process of sharing the product of industry. Distribution is a matter of getting possession of goods and the right to use them. As Professor Ely says, "Distribution is a question of ownership, not a question of the location of goods."

Ely points out another fact that is important, namely, that distribution really includes two related but different processes. The first of these is the distribution of wealth among individuals and families, the second the distribution of the product among the factors of production. The first of these processes brings it about that some are rich and others poor. It is the question of wealth and poverty. The second is a question of, for example, wages and interest.

The reading that has been selected for this chapter is in itself an excellent introduction to the subject of distribution, especially to that aspect of the subject which emphasizes the distribution of the product among the factors of production.

The personal distribution will be dealt with more fully in a later chapter.

The Chinese student will do well to note how powerful customs, laws, and traditions are over the distribution of wealth. The laws or customs governing inheritance, for instance, have made Chinese economic problems different from those of a country like England. The position of the official class in China affects the distribution of wealth profoundly and, again, gives China economic problems in many respects peculiar to herself. The private ownership of land and the position of the landlords rests upon the sanction of old tradition, and this tradition makes private property in land a different thing in China from what it is in the United States. In China the customs of the country supplement, if they do not take the place of, contract as a means of arriving at agreement in the field of distribution. The student ought to give some time to the consideration of the customs and traditions of his own country, province, and city that affect the distribution of wealth.



### 39. Sharing the Product\*

*By H. C. Adams*

"If the identical goods were directly and immediately divided among those who take part in their production, the matter would be comparatively simple."

—SEAGER.

No description of the business world would be complete without a consideration of the manner in which the common product of coöperative work is shared among the workers. To explain how this is done, under the industrial, political, and social conditions of our time, is the purpose of the present chapter.

*Statement of the Question.*—A rapid survey of some of the facts thus far disclosed, will aid in a statement of this question. We have learned from the foregoing chapters what is meant by saying that all goods are the product of coöperative work. We have come to appreciate that we are dealing with an industrial society composed of an organized body of workers, and not with individual workers. We have come to understand that the total output of a week, a month, or a year, is increased because workers use machinery and submit to the discipline of an efficient organization. We know that, for this reason, the per capita product is much greater, perhaps four or five times greater, than it would

\*From "Description of Industry," by Henry C. Adams. Henry Holt and Co., New York, 1918. Reprinted by permission.

have been had each worker worked with tools and by himself. It is these facts that make the problem of sharing the product such a difficult problem, for no one has as yet devised a means of measuring the productivity of any particular worker or a group of workers, in an industry adjusted to the requirements of the principle of division of labor.

Other lessons there are which have a direct bearing on the problem in hand.

We have learned that all goods pass through the market many times before they finally lodge in the hands of him for whom they were made, and that the law of demand and supply controls their sale and distribution. We have learned that, according to the system of law under which we live, men are permitted to own land and capital, and to loan them out for use in the process of production. We have learned that all workers stand as freemen before the law, and that they will not work except in response to an adequate motive. And finally, we have learned that our industrial organization, except so far as it is under the direct control of government, is held together by contracts and agreements, and that these contracts and agreements are entered into voluntarily by all parties concerned. All these facts must be accepted as conditions in a study of the process by which the industrial product is shared.

To the above lessons there must be added a new fact. Our study of the production and sale of goods does not complete the analysis of what may be termed

the circle of industry. Up to the present point in our study, we have assumed that circle to be:

wants lead to work,  
work produces goods, and  
goods when sold and consumed give the satisfaction of the wants which caused the work.

This seems like a closed circle, but it leaves out one important fact; namely, the fact that consumption means men, women, and children eating, wearing, and using the various kinds of goods that are produced, and that such consumption cannot take place until consumers are given a property in the things to be consumed. It may be said that workers secure goods as their property when they buy them on the market. That is true but it does not answer the question raised. How do they obtain the money with which to buy; and who or what decides on the amount of money each is to have? The problem of sharing the product thus comes to be a study of personal incomes. What fixes wages? What determines profits? How does the rent of a particular piece of property come to settle at a certain figure? What makes the rate of interest? These are the kinds of questions covered by a correct statement of the problem of sharing the industrial product

We have expressed our problem in terms of money, but the amount of money one gets is of slight importance until one knows what he can buy with his money. This leads to a distinction between real wages and

nominal wages, real profits and nominal profits, and the same is true of all incomes. The money wages in a country may be high, but if the prices are also high, the real wages may be low. However, this phase of the topic may be dropped. The first step is to inquire how the total product of coöperative work is to be shared by the co-workers, their respective shares being expressed in money incomes. We shall confine our attention to this first step. The second step, namely, the effect of current changes in the market price of goods on the standard of living in the various classes that receive these various incomes, would carry us beyond the purpose of this book. Our statement of the question, therefore, is limited to the determination of money incomes.

*The Production Contract.*—One who knows the business world, is familiar with the fact that most men judge of their incomes by comparison with the incomes that others receive. The bricklayer compares his wages with the wages of the plumber; the plumber compares what he earns with the profit made by the keeper of a corner grocery; the merchant grocer compares his income with the salary of a preacher, or a teacher; these in their turn compare their salaries with the fees charged by lawyers and physicians, and so throughout the list. This is not, perhaps, a bad way to set up a relative test of the incomes which come to the various groups of workers; but it is no explanation of wages, interests, salaries, fees, or profits. Universal comparison explains

nothing unless one can find an income somewhere in the industrial world that rests on its own bottom, and which can be used as a standard with which to measure all other incomes. It is the purpose of this paragraph, devoted to an analysis of what is termed the production contract, to find such a standard.

The production contract, as that phrase is used here, covers the conditions under which industrial or business units are organized for the production and sale of goods. The direct parties of the production contract are,—the enterpriser or responsible business manager; the employee whose pay comes in the form of wages, fees, salary, or commission; and the capitalist who supplies the money necessary for starting and running the business. These three parties stand for different services, all of which are required to carry on a business, and each of which represents an interest that must give its consent before a wheel can be turned or an order accepted.

The responsible member of every business created by a production contract is the enterpriser. He it is who promotes the enterprise. He seeks out the line of production to be undertaken. He decides on all formal matters, such as the kind of goods to be handled, the amount to be produced, and the market for their sale. He calculates the amount of money needed to start the business and to carry it on. He bargains with the capitalist for the price to be paid for the use of capital, and with the various classes of employees for the price

to be paid for their services. Under the modern method of doing business, the pay for both capital and labor is determined before production is begun. It is agreed upon and expressed in the production contract. The enterpriser, on the other hand, does not know, until the work is done and the goods are sold, what his pay will be. He agrees, under this contract, to stand the loss if loss there be, and the other parties of the contract agree to give him the gain or profit if the enterprise proves to be commercially successful.

From the foregoing it is clear that the responsible manager stands for the interest that has the last word in forming a production contract. Neither the employee nor the capitalist is obliged to think about the probable success of the business. Each demands, in wages or in interest, all he has the face to ask, leaving it for the responsible manager to beat down these demands to a reasonable figure, and for him the word "reasonable" has a commercial basis. It is his peculiar task to analyze costs and to keep the cost of production below the price at which the product can be sold. And this he will do for the reason that it is this margin between cost and price which measures the profit that he receives as his personal income. It is, of course, true that every citizen in the business world desires to have as large an income as possible, but the enterpriser is in a peculiar situation. He is the only industrial agent whose income depends on keeping the costs of production as low as possible. He alone feels the force of competition in production,

and it is he alone whose decisions are controlled by the fact, that an agreement to pay too high wages or too high interest will lead to the failure of the business placed in his charge. By virtue of his position, he is forced to be the keeper of the door of industrial opportunity, and to bestow the rewards for industrial service.

The production contract is, in fact, the assembling of two classes of contracts, the one pertaining to wages and the other to interest, and the enterpriser is a party to the contracts of both classes. He is on this account in a position to compare the various factors of cost, and to select such a combination for the organization of the business placed in his charge as will reduce the production cost to a minimum. It is this selection on the part of the responsible manager that places a limit upwards to both wages and interest. The manager is forced to compare the relative efficiency of the labor element and of the capital element in production. It is by this comparison that he makes for himself a standard with which to measure what he is willing to pay. He will not pay more to labor than it would cost if he borrowed capital with which to buy machinery to do the same amount of work; nor will he pay more in interest than it would cost if he hired laborers to do the same amount of work by hand.

In this comparison, which is made daily and by thousands of different managers in all kinds and sorts of business, do we find the measure of the maximum basal wages that laborers can reasonably expect, and

the measure of the maximum rate of interest that capitalists feel free to demand. The basal wage and the average interest will tend to settle at points where it is a matter of indifference to the manager whether he hires laborers or borrows capital. The kind of competition that controls the distribution of the product, is the competition between labor and capital for acceptance by the responsible manager in his organization of a business. He considers the offer of each as a potential cost, and accepts the one which he estimates to be relatively more effective in producing profit. It is this estimate that fixes the standard on which the wage scale rests. We find here the bed-rock of our problem. With the basal wage, the average interest, and the normal profits as bench marks, we may run levels throughout the entire business world, and by means of comparison explain every phase and form of income.

From the foregoing explanation, one might conclude that the responsible manager is able to fix his own income at any figure he sees fit; but such a conclusion would be incorrect. The amount which an enterpriser can pay to himself in the form of profit is limited in two ways. In the first place, it is limited by the fact that no single establishment produces all the goods of a particular sort, and competition between different producers, or between different classes of goods, will keep the price down to the cost of their production, including a normal profit. In the second place, the fact that every citizen of the business world is at liberty to try his hand



at any and every occupation, results in the establishment of a rate of pay that is accepted as normal for every class. If the laborer or the capitalist does not like the wages or the interest offered by the responsible manager, they have the right, either jointly or separately, to organize a business of their own, and to become themselves responsible managers. Under such conditions, any attempt on the part of a manager to squeeze wages or interest below their commercial rating, will result in his giving way to some one else, possibly some one who comes up from the ranks of labor, who is able to compute cost and estimate price with greater accuracy. The responsible manager seems to be the dictator of his own income; in fact, a limit is set to his income by commercial conditions. This, at least, is the tendency in a free and open market.

We find, then, in the terms of the production contract, the basis or standard from which all other incomes are measured.

*The Secondary Distribution Groups.*—The aggregate product of joint work is shared among four groups or classes of incomes. The first of these, which we call the primary commercial incomes, embraces all incomes covered by the production contracts. The wages and salaries of employees engaged in direct production, the interest on capital used in production, and the normal profit to the responsible manager, are all commercial incomes. They differ from other incomes in that they constitute production expenses and together make up

the cost by which normal prices on the open market are determined. The other groups of incomes are incomes derived from direct services, incomes derived from rents, and speculative and monopoly incomes. These three groups of incomes are distinguished by the fact that they do not enter into cost; they are, however, closely related to commercial incomes to which they must be referred for the purpose of explanation.

(a) **Incomes Derived from Direct Services.**—The salaries and wages paid to government employees are incomes of this class. The government is not a commercial corporation, nor are the services which it renders such as can be bought and sold on a competitive market. It gives protection to persons and property; it is responsible for the enforcement of contracts; and it undertakes to provide for public health, public recreation, public education, and other like services. On its formal side, however, government is the men who govern. These men have wants that must be satisfied the same as other workers who work for the production of goods to be sold on the market. This means that a certain amount of the joint product of current industry must be set aside for the support of the servants of the state.

In modern society, the income of the government which it distributes as salaries and wages to public employees, and as payments for needed materials and supplies, arises from taxation. The significant fact is that the public income must just equal public expendi-

ture. There is neither profit nor loss. Its amount is determined by political and not by industrial methods. The fixing of the income of the state is not an industrial act. The making of contracts and the control exercised by industrial competition has nothing directly to do with the fixing of the tax fund out of which the wages and salaries of public employees are paid. On the contrary, the size of the fund is fixed by the wages and salaries paid.

If the wages and salaries of public officials are not the result of a commercial bargain, what is the consideration by which they are determined? The answer is simple. They are determined by means of constant comparison with commercial incomes. The employees of the state cannot get more, nor will they accept less, than the standard pay for similar work performed by men of similar skill in the business world outside the government service. Considerations of the honor that comes with a public office, the kind of work, and the like, may influence the final result; but that which controls is the comparison that public employees are constantly making.

Many others there are, besides our public servants, whose pay is fixed by comparison with commercial incomes. The preacher, the teacher, the lawyer (if in general practice), the physician, and all workers engaged in domestic service, find the explanation of what they receive in the fees, salaries, and wages paid commercial workers. A description of the ways in which this comes about will make clear the connection.

In the first place, comparison implies the possibility of shifting employment. The teacher compares his salary with what his neighbor, an insurance agent, gets, because he can readily become an insurance agent if the school board will not raise his salary. A lawyer compares his fees with the income of a business manager, because he feels he has the qualifications to run a business successfully. Domestic cooks compare their wages with what the "hands" can get in a down-town factory, because they know they can get employment in the factory. The significance of comparison in the adjustment of salaries and wages for those who live by direct service, rests on the universal right of contract guaranteed to every citizen by our fundamental law.

In the second place, these incomes derived from direct service are paid out of other incomes, and the amount so paid is limited by the market demand for the service in question. What one pays for coal he cannot spend with a dentist. What one pays to his dentist he cannot spend in buying coal: what one spends on theaters and concerts he cannot use in buying clothes. This means that direct services are properly regarded as marketable goods, and as such come into competition with other goods offered for sale. It is this competition of all sorts and kinds of goods, for the favor of the buyer, that settles the amount that will be spent for direct services; it is the competition of the various kinds of employment which work through the comparison above referred to that settles the number of persons who

are willing to render direct service: the result of the joint action of these two kinds of competition is to fix the personal income of all who render a direct service.

(b) *Incomes Derived from Rents.*—The modern business world allows the private ownership of land. This fact creates a land-owning interest which must be consulted, and whose consent must be obtained, before industries can find standing ground, or secure material and power, for purposes of manufacture. The necessity of that consent is the basis of the claim of the landowner for a share in the product of current industry. The rent principal extends to other things than land, but what follows is confined to land rentals.

From the point of view of income, the landowner stands in a class by himself. Although he controls a factor of production that is limited in amount, he is not a monopolist. The price of agricultural goods is determined by the cost of production where they cost the most, and those lands that permit production at a less cost bear a rent. To receive this rent as a personal income is the condition on which the owner of the land permits it to be used. The income of the landlord, then, is built out of the difference between what it costs to produce agricultural goods on his land, and what it costs on land where there is no rent; that is to say, on land where the cost makes the price. He cannot get more, nor can he receive less. The different amounts of rent which different landlords receive vary with the different commercial grades of land.

It is said that rent does not enter into cost. This is true. The price of corn would not fall if all owners of land should give up their rent. This is a most important fact in our explanation of the sharing of the profit of current industry. The question of how much is to be taken as rent is never considered in the production contract. The owner of the land is not a party to that contract. Those who are concerned in producing crops on the poorest land, that is to say, the land where there is no rent, are obliged to bargain. They are obliged to agree as to the wages and the interest, and the estimated profit; but the rent, where there is any rent, comes to the owner of the land out of the market price over and above the cost of production on the superior land.

While, therefore, the consent of the landowner to the use of his land must be gained before it can be used for production, the amount paid for this consent is not a matter of commercial bargain. Those who cultivate his land will pay him all profit over and above normal profit. Nothing that the landowner can say or do has the least influence on the bargains that give to the business world its standards for normal wages, normal interest, and normal profits. Indeed, the landlord is not a commercial agent. He is merely an owner. The competition of enterprisers forces a certain amount of income upon him. He cannot increase it; he cannot reduce it; the only thing he can do is to accept it. This would be equally true if the government should

own the land. The rental income accrues to the owner by virtue of ownership. Its amount is the result of competition for the opportunity of using different grades of land productively.

(c) **Speculative and Monopoly Incomes.**—Speculative and monopoly incomes are the distribution to individuals of speculative and monopoly profits. These come into existence because, for some reason, the force of competition is not able to reduce the price for which goods are sold to the cost of their production. These profits are profits over and above the normal profit as determined by the production contract. It is the constant effort of competition to kill speculative and monopoly profits; but so long as speculative and monopoly profits exist, they claim and they receive a share of the current product.

The relation of incomes of this group to the industrial process may be indicated by two remarks concerning them.

In the first place, these incomes, like rent, form no part of the cost of production, and, for this reason, have no bearing on those commercial forces by which the standards of pay for laborers, capitalists, and enterprisers are determined. They who receive speculative and monopoly incomes do not, like those who render direct services, test their incomes by comparison with commercial incomes, nor will they leave an occupation because their speculative or monopoly income is not as high as they desire. This group of incomes are "all

velvet." They stand for excess profits over normal profits.

In the second place, the industrial principles which fix speculative and monopoly profits have to do with the marketing and not the making of goods. These incomes are called into existence by the fact that the avenues of supply are in some way controlled, and that a smaller quantity of goods is permitted to come on the market than would be bought if the price were reduced to the cost of production. Whether or not it is wise to permit these classes of income to continue, either in whole or in part, is not for us to consider at this time; nor is it for us to ask how they could be squeezed out, were such a result desirable. They exist because competition does not work its normal results. They are a market fact and not a fact of production. We have learned our lesson respecting them when we see how they have come about, and that they represent profits over and above the normal profits which make a part of the cost of production. They are justified, if at all, because they are necessary to induce enterprisers to take unusual risks.

*Summary of the Analysis.*—It is sometimes said that the demand for labor as compared with its supply fixes wages, and that the demand for capital as compared with its supply fixes the rate of interest. These statements are at best superficial truths. They shed no light on the process by which current products are shared. They assume, what is not true, that wages are fixed



independently of interest, and that interest is fixed independently of wages, and that both wages and interest are fixed independently of what the market is willing to allow as a reasonable rate of profit. No decrease in the supply of labor could permanently raise wages above the point at which the introduction of better machinery would result in a higher profit; while an increase in the supply of labor, except it be labor of inferior quality, is itself an invitation for the building of new capital with which to employ it in the most efficient manner. It is quite possible that a shortage in the supply of a particular group of workers would permit the members of that group to obtain, for a time, wages higher than the commercial wage. This would mean the temporary depression of profit in the industry concerned. It could not continue. A powerful trades union, also, provided its numbers are comparatively small, might force wages above the commercial wage. This would mean a rise in the price of the goods produced by them and a corresponding depression in the real income of other workers who consume these goods. That is to say, a trades union when it acts in this way is a monopolist, and secures, under the guise of wages, what is, in fact, a monopoly income. But when one has recited all the possible exceptions, he is obliged to return to this truth, that the analysis of cost determines the standard by which all kinds and sorts of income are measured.

We are now in a position to describe concisely the process by which the product of current industry is

shared among industrial workers. The basal wage, the average interest, and the normal profit, are first evolved, out of the necessity imposed on these three interests to come together and to agree on a business program. They are obliged to coöperate or the industrial process cannot go on. The limit of what any or all of these three interests can get as an income is set by what the market is willing to allow for the kind of goods produced. This is tested out by the experience of thousands of production contracts. As a result, certain well-recognized standards emerge from the trial, so that the business world comes to know what is the basal wage, the average interest, and the normal profit.

These standards having been established, the second step in the explanation of the process, is to recognize that services which are non-commercial in character are adjusted by comparison with services that are commercial. The salaries of government employees are fixed by comparison with what such employees could get if they should go into business. In the same way, the salaries of preachers, and teachers, and the fees of physicians and lawyers are checked against what men of this training and talent could get in the services of corporations engaged in business.

The third step is to recognize that speculative and monopoly incomes are built out of sales at prices in excess of the cost of production. In a sense, they are predatory incomes, for what speculators and monopolists get is a loss to those who buy their goods. In a strictly

upright business world all goods will be sold at their cost.

The rent income, as already explained, rests on the fact that land is limited, and that such land as is used industrially is of different grades. We have here a permanent share in the current product, and as long as private property in land continues, rent will be a permanent personal income.

## CHAPTER XIV

### RENT

#### INTRODUCTION

The readings in this chapter begin with a statement of the theory of rent by Professor Duncan. This statement is to be compared with the theory of rent as it is stated in the previous chapter by Professor Adams.

The second reading is a selection that makes some comparison of land values in Shanghai with urban land values in England.

After this there is a statement of that proposal for economic reform to which we give the name *The Single Tax*. The student is advised once more to make a comparison between the attitude of Professor Duncan toward the Single Tax and the attitude that he believes Professor Adams would be likely to take.

A careful study is needed of the facts about land ownership and tenancy in China, the position of the landlord in Chinese economic life, his relation to his tenants, to agriculture and to the government. The extent of peasant proprietorship needs investigation as well as the probable causes of it and the results upon the life of the community of general peasant proprietorship such as exists in many northern provinces in China. The existence of a landless class upon the land, that is,

of laborers who have no rights of ownership or lease over land but who work for wages, is another matter that deserves attention. These things are mentioned to show the many economic problems that are more or less closely associated with the subject of rent. It may be taken for granted that the control of land in an old agricultural country such as China has had much to do with the political and social organization of the country.

#### 40. A Statement of the Theory of Rent\*

*By Kenneth Duncan*

The word "rent" has a different meaning in economics from the meaning with which it is used in popular language. The word in ordinary speech usually refers to the price paid for the use of land or any other durable good for a certain length of time. Thus we speak of the rent of farm land, of a house, of a typewriter, of a piano, or of a horse. This "rent" includes not only the actual earnings of the article, but also allowances for risk, replacement, interest on investment, etc.

In economics the word "rent" has a much more limited meaning. It signifies the net earnings of land, the particular value which natural agents have contributed to production. This is often termed *economic rent*, and it is in this sense that the word "rent" is used in the following pages.

\*Kenneth Duncan, "Essentials of Economics," Shanghai, 1917; Commercial Press. Chapter X, "Rent," a portion, pages 80-84. Reprinted by permission.

In our study of land under the subject of production we found that there were different grades of land, distinguished by the opportunity offered for the investment of labor and capital. Some lands are very fertile, but are so inaccessible to the market that the opportunity for investment is small. Some lands are comparatively unfertile, but their proximity to the market makes them good for the investment of labor and capital. Some lands just pay the normal returns to labor and capital and no more; and represent *marginal opportunities*. The important thing that determines the productive value of land is not the grade of land but the *grade of opportunity*.

Some lands which represent a superior opportunity are intensively cultivated, until the operation of the law of diminishing returns renders profitless the additional investment of labor and capital. Such lands really contain *several* opportunities, each of which is less productive than the one preceding, and the last of which merely pays expenses and yields no surplus whatever.

*This extra return from a certain area of land above the expenditure for labor and capital is economic rent. It is the difference between the product of the investment of labor and capital on the better than marginal land and the product of the same investment on marginal land. It is what society gains by the development of this area of land; it is what society would lose if this area of land were withdrawn from use.*

The *basis* of rent is therefore the law of diminishing returns, not the differences in the productivity of different areas of land.

The poorest opportunity for the investment of labor and capital that must be taken up in order to supply the market is the marginal opportunity, and if competition is perfectly free such opportunities are free. In the case of land they offer *no rent*, but only returns sufficient to pay the normal costs of the labor and capital used. The owner of such land, if it is used by another, should make no charge for its use.

Land which does not offer as good an opportunity as this is, of course, also no-rent land, and free. The desert lands might be productive and so might the far-away mountain valleys, but the cost of cultivation and marketing of the product would be so great that it would not meet the expenses of hiring the necessary labor and capital. Such lands are not used.

So only those lands that yield an excess over the costs of cultivation are *rent lands*.

The price of wheat grown on the best lands or on the marginal lands is the same, but the *income* from the best lands will be more than that from the marginal. If the owner of rent lands himself cultivates them, he retains this surplus. If he is not the one who cultivates the land, he is able through competition to demand a payment for its use, equivalent to the excess.

Property in rent land is a matter of competition, and of course that land which yields the greatest rent

will be most in demand. Modern society in all countries has allowed the ownership of most land to be private, and permits the owner to keep its full earnings. The economic *advantage of private property* lies chiefly in the fact that if individuals own the land they will develop its natural opportunities to the fullest.

From our analysis of rent it follows that the rent of an area of land will be changed only by:

(1) A variation in the margin of cultivation or use; *i.e.*, by the land being more or less intensively used or by new lands being opened for use.

(2) A change in the productive capacity of the land itself.

(3) A change in the methods and processes of the use of land.

(4) A change in the number or character of the population served by the land.

In general the rent of land increases as the margin lowers and lessens as the margin rises. These laws apply to city lands as well as agricultural land.

The purpose of our study of economic rent is to determine practically what *contract rent* should be. The contract rent is the actual price paid for the use of land. It is usually a little higher than the economic rent, for it must include in its allowances for any risk, for the necessary trouble incidental to the transaction, for land taxes and for costs of keeping the land in its original condition. *Economic rent serves as the basis for contract rent.*



### 41. Land Values in Shanghai\*

What is called the land market in Shanghai presents certain features which are perhaps peculiar to Shanghai. Strictly speaking there is really no local land market at all; the few lots of land or property which change hands during normal times are insufficient to establish any real market. Prices which can be obtained for properties fluctuate in sympathy with conditions which at first sight would seem to have very little connection with land. A temporary trade boom or depression will sometimes have the exactly opposite effect on land prices to that which might be expected. Exchange and internal political unrest both have a marked influence. The controlling features, however, are the disinclination of the average Chinese owner to part with his property and the very safe form of security offered by land, or land and buildings, held under a British title deed. The holding of a British title deed is considered to be absolute proof of title and the ease with which title can be transferred, the absence of red tape and expensive procedure, has made the Shanghai system of title deeds one of the simplest, best and safest in the world. That this is appreciated can be seen by the fact that the 1919 British Consular list shows the register of upwards of 10,000 lots in Shanghai only.

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\*Land Values in Shanghai. Some Notes on the Local Property Market, *British Chamber of Commerce Journal*, July, 1919, p. 74. Reprinted by permission.

These two conditions, the disinclination to sell and the safe form of the security, and the somewhat limited area available for development have had the effect in the past of steadily increasing the prices obtained for such lots as from time to time came into the market. These same conditions will, as far as can be seen, continue to exercise a like influence on prices and there would seem to be no reasonable grounds to expect anything but a steady increase in future. Fluctuations will undoubtedly occur in the future as in the past and unwise buyers, who may in future purchase at the top of a boom, will no doubt experience the same difficulties as of old in disposing of their purchases at a price that will not show a considerable loss. This, however, is an incident which is, and always will be, connected with any market of such a limited nature.

*Another Feature.* There is still another feature of the local market which is perhaps peculiar to eastern markets and which is very difficult to explain. Booms and depressions are, if not always easily understood, at least usually explainable, but, that a property after having been unsuccessfully hawked round the market for months should suddenly sell, resell at a considerable profit and again resell at a further profit all within a period of a month or two would seem to be inexplicable, yet this occurs in Shanghai with a certain frequency. In a more normal land market, the income produced by a property, or the income it could be developed or redeveloped to produce, is a fairly sure basis for cal-

culating what that property will sell for in the open market. Here, in a number of the cases such considerations appear to carry no weight at all and prices fluctuate to a degree which is astonishing to those having knowledge of the working of more stable markets.

Apart, however, from these somewhat sudden and unexpected fluctuations, there is a very steady increase (taking one year with another) in the price of land. What this increase amounts to, over any given period, say for instance the past ten years, it would 'be difficult to say. There are so many exceptions which disprove any percentage figure arrived at as to make a definite statement on the subject open to question and of little value. Even the more sure method of estimating increases in value by the increase in earning capacity of the land can be disproved by a number of sales during the given period. There have been during the past year some few sales at prices which would tend to show a very marked increase in values but which can hardly be maintained for any very extensive operations. Particular lots of land have changed hands at prices, excluding the buildings, reaching approximately Tls. 125,000 per mow, the lots not being Bund lots nor in any specially favored position. Against these, however, can be set other properties, which appear to be of equal if not greater value, which have been willingly sold at about half these prices. It may be interesting to readers to make some comparison between these prices and prices obtained during this year in London.

Tls. 125,000 per mow at 5/- exchange (about the exchange at the date of the sales) is the equivalent of £187,500 per acre. At a recent sale in London of a property in Hatton Garden, the very center of a very rich trading district, a price of £3,600 was realized for a site measuring 2,450 square feet, the buildings being included. The price obtained was described in the *Estates Gazette* as excellent. £3,600 for 2,450 square feet is approximately £64,080 per acre, or about one-third of the price per acre of the land above referred to in Shanghai. Another recent local sale of a lot measuring about one acre realized approximately Tls. 95,000 per mow (the value of the building being practically negligible). If this price is converted into sterling per acre at so low an exchange as  $\frac{3}{4}$  it gives a result of £95,000 per acre.

All these prices, whether considered in silver or in gold, are somewhat misleading in any general study of the land market. They would tend to show such an increase in land values as is by no means established, for although properties have been sold recently at prices from 60 per cent to 80 per cent in excess of what they were offered at six years ago other properties have been willingly sold at prices considerably below what would have been accepted in 1913. The circumstances and conditions affecting each sale are so varied that any generalization from particular cases may be very misleading.

*Chinese Developed Property.* So far these notes have been chiefly concerned with central district lots and

what is true of these is in a great measure true of water frontage lots. In fact it is probable that the most considerable increase in "value" during the past ten years has been in water frontage property.

In regard to other districts; for properties fully developed with Chinese shops and houses the market would appear to be more steady and it would seem that the prices obtainable for properties, with certain exceptions, is based more nearly on the income produced by the property. Rents from good classes of Chinese-developed property have increased during the past ten years by from 30 per cent to 50 per cent, according to the district and the nature of the property, and the increase in land values, leaving out of consideration temporary booms and depressions, has about kept pace with the increase in rents.

Properties developed with foreign residences show considerably less increase than in the case of Chinese. Large blocks of foreign occupied property on the northern and eastern districts are at practically the rents of ten years ago. The often-heard cry that rents are continually advancing is based on the rents asked for the more recently constructed houses. In these cases, no doubt, higher rents are demanded than for the older houses, but tenants now insist upon a better type of house with more modern conveniences and this and the ever-increasing cost of land and building can only result in increased rents.

Newcomers to Shanghai are frequently quite convinced that a well-built, nicely appointed detached

house with tennis lawn, garage and kitchen garden should be obtainable at from Tls. 65 to Tls. 100 per month. Such a house would require about 3 mow of land costing anything from Tls. 2,500 to Tls. 4,000 per mow. If, therefore, the owner is to receive a fair return on his money he will require almost the rent the newcomer considers sufficient for the land only. It is easy to understand the point of view of the newcomer. He thinks land on the outskirts of Shanghai should be cheap. Labor certainly appears cheap to the uninformed and he probably does not think that about half the house (in point of cost) has to be imported. The facts are, however, that the land is not cheap and labor is slow, inefficient and wasteful.

Agricultural land in England suitable for development in the neighborhood of towns in the Home Counties varies from £80 to £200 per acre, or to express it in taels per mow, taking exchange at  $\frac{3}{4}$ , Tls. 80 per mow to Tls. 2,000 per mow. Compare this with land five miles from The Bund selling at Tls. 1,500 to Tls. 2,000 per mow. This is one of the conditions which tend to make the local housing problem a difficult one and so far as can be seen the housing problem will in the no distant future present grave difficulties. Consideration of this is, however, outside the scope of these notes and must be left to a future occasion

*Summary.* To sum up the position in reference to land it would appear that, as a general rule, for sites suitable for offices in the central district and lots with

water frontage there are so few sellers that when there is any considerable demand prices become inflated, and during quite normal times the general improving prosperity of the Settlement and the well-settled belief in the continuance of that prosperity coupled with the small number of lots available, result in a steady year-by-year increase in land values. For properties fully developed for Chinese occupation the prosperity of the Settlement and the increasing number of Chinese who wish to reside and do business under the favorable conditions offered is reflected in steadily increasing rents and the consequent higher prices obtained at each successive sale, conditions which, so far as can be seen, will continue. For outlying residential properties the disinclination of the Chinese owners to sell, the increasing tendency of wealthy Chinese to purchase and reside in large well-situated foreign houses has so inflated the price of land that it is a matter of great difficulty to provide well-built foreign residences at a rent which, while within the reach of the man on a moderate salary, will show a fair return on the investment. Finally much of the land in Shanghai would appear to have reached a price which is considerably in excess of what may be considerably its true value and conditions are such that there would appear to be every prospect of prices continuing on an upward grade.

## 42. The Single Tax\*

*By Kenneth Duncan*

There have been many schemes proposed which claim to offer a single cure for all industrial evils: remedies for all the social and economic troubles of the world. One of the most attractive and interesting of these is the program of the single tax.

*The single tax is a plan for economic reform which proposes that the state shall receive the entire economic rent from all land and that all taxation shall be abolished except that upon land values.*

It is a scheme that has been growing in popular favor in recent years and one of such great importance that all citizens should study it critically.

The theory that all land rent should be claimed by society is known as *land nationalization*. This is not a new idea. It made its appearance in England and France in the seventeenth century. Then J. S. Mill (see Mill's "Principles of Political Economy," Book V, Chap. II, secs. 5 and 6) offered a definite plan for land nationalization, in which he proposed that all *future* increases in land value, which were not due to improvement made by the landlord, should be taken by the state.

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\*Kenneth Duncan, "Essentials of Economics," Shanghai, 1917; Commercial Press. Chapter XIV, "The Single Tax," pp. 109-114. reprinted by permission.



The most noted and popular advocate of the single tax, however, has been *Henry George*. He outlined his plan in his famous book, "Progress and Poverty." The only important difference between the program of Henry George and that of J. S. Mill is that George suggests that *all* past, present and future land values shall be seized by the state, while Mill proposes that only future increments of value shall be taken.

The plan for the single tax is based on the following principles:

(1) Economic rent represents a social product or an *unearned increment*, by which is meant an increase in value due not to the expenditure of labor or capital but to the general progress of society. Land is limited in quantity, hence as society progresses and the demand for land increases, its value increases. Since society has created this value, society should receive it, says the single taxer.

(2) Land is the free gift of nature to man and should be free for all men. Equality of opportunity to use the land should exist for all. But our present laws permitting private property in land make this impossible. These laws even make possible *land speculation*, the aim of which is not to use the land but to gain by selling it at a higher price. Much land that might be used is thus left idle. Hence private control over land should not be permitted.

(3) *The effect of an increasing population is to increase rent in two ways:*

- (a). By lowering the margin of cultivation,  
and
- (b) By bringing out in the land special uses  
it did not have before.

(4) There is but *one margin of production*, that of *agriculture*, George declares. He says that a man's wages are measured by a margin equal to that which his labor can earn by working directly with nature. Wages could never be less than this if land were free. But land is not free. Hence every increase in land values serves only to oppress the laborer, for he is unable to use the land unless he pays a high rent. The capitalist also must depend upon land in order to use his capital. Therefore, declares George, "irrespective of the increase of population, *the effect of improvements in methods of production and exchange is to increase rent.*" This, he says, is "the law which associates poverty with progress."

(5) *A land tax cannot be "shifted,"* that is, it must be paid by the user of the land and cannot be avoided.

(6) The single taxers believe that the *unearned increment of land rent would be sufficient to meet all the ordinary public expenditures now defrayed by taxation*, or at least most of them, and hence it should be substituted in place of all other taxation.

The practical ways in which the single tax might be carried out, if adopted, are as follows:

(1) The ownership of land could be transferred directly from private persons to the state. The present

owners might then be compensated or not. Most single taxers suggest that some compensation be arranged, much as when private land is condemned by the government for some private purpose.

(2) The ownership of land could remain with private persons and a tax be imposed to cover that portion of the unearned increment which is due to improvements made by the state.

(3) The ownership of the land could remain with private persons, and a tax equal to the annual economic rent be imposed, allowance being made for any portion of the rent being due to private improvements. This is practically Henry George's proposal.

Let us *review critically the principles* on which the plan for the single tax rests.

(1) That economic rent represents an "unearned increment" there can be no doubt. But no point is made against land or its rent unless the single taxer can show why *only this* form of special privilege should be attacked. To levy a tax equal to the total value of land, as the single taxer wishes, we ought in justice also to have society claim the total value of all franchises, patents and copyrights as well as most inheritances. They all represent "unearned increments."

(2) That land speculation causes the land to be idle is not true of agricultural land, for if a land-owner desires to hold land until it increases in value, it will not lower its value to rent it. It is true that vacant land in cities (urban sites) is sometimes left idle, but

this evil could be remedied by placing a proper tax upon such land.

(3) We may accept as *generally* true that the effect of an increasing population is to increase rent, but its effect *also* is to increase wages and interest and usually in a much greater proportion. However, the effect of social progress has also often been to *decrease* rents on older lands.

(4) The single taxers, like the physiocrats, attribute an unduly great importance to land. The statement that there is but one margin of production is false. We have found from our study of economics that wages are not dependent upon land but upon the earnings of labor just as capital is dependent upon the earnings of capital. As a matter of history and observation, the facts are that *improvements in production have increased the wages of labor by increasing the demand for labor.*

(5) Land has always been considered a proper subject for taxation, but that land tax should be the *whole* tax and that *no other* productive agents or unearned increments should be taxed does not seem fair.

(6) Very much doubt exists that the economic rent—which means only the return from the bare land, not of any improvements on it—would be sufficient to meet all needs of public expenditure. In England, in fact, there has been a decrease in rents.

Since the principles upon which the single tax is based are so wrong and unfair, we can hardly expect

that it would be practicable. The task of distinguishing between the land itself and the improvements on land would be very difficult if not, indeed, impossible.

There is *no economic* basis for the single tax. It is a question of ethics: as to *whether or not private property in land is justifiable*. Private property in land has been approved by society through all its history; it is the source of much individual energy and social progress. "It is only when the control of land by individuals becomes a distinct menace to social interests," says Professor Seligman, "that its rigid regulation, or even its assumption by the community, becomes legitimate."

To take land from private persons *with* remuneration would be a serious and doubtful policy; to take land or its rent *without* remuneration would be, as Professor Clark has pointed out, pure robbery.

## CHAPTER XV

### WAGES

#### INTRODUCTION

By "wages" we ordinarily mean the amount of money paid to the laborer for his services. In a general sense all who live by the sale of their services are laborers, whether they are the salaried employees of a bank, members of a profession or men employed by the day to work on the streets. But, as Professor Ely points out, we recognize that there is, in every country, a large class of those who are employed by the day in agriculture, in shops, mills, and factories. It is this class we have in mind when we speak of labor problems.

It is plain that we cannot tell much about the condition of a workingman when we know merely how much he receives in money per day. We must know whether he is steadily employed throughout the year. We must know how much he can buy with the money he receives; we must know whether he receives anything besides this money in the way of compensation. We must know also whether other members of his family usually work and what the income of the family is.

When we have considered these matters we are able to form some idea of the value which has been set upon the services of labor. We are then face to face with the

more difficult problem of explaining how it happens that the community has, through the employer, set just this value upon the services of labor. When we have explained this we have explained wages.

Wages, we may say, are the price paid for the services of labor, and wages, like other prices, may be explained by examining under the general headings of demand and supply the forces that make them what they are.

Under demand the first fact to be noted, is that wages are paid because the product of labor is wanted. Since we want goods and will buy goods the business man and the employer are able and willing to pay men to make the goods.

Clay\* has emphasized a point in this connection that the Chinese student ought to give serious attention to. In attempting to answer the question as to how far high wages mean high prices for the product and low wages low prices, Clay says: "The employer buys labor, not the laborer; if he can get a great deal of labor from one man it may pay him as well as, and will probably pay him better than, buying a little labor from each of two or three men. High wages, if the amount or quality of labor given in return for them corresponds, mean 'cheap labor'; low wages, if the labor given in return is inefficient or small in quantity, mean 'dear labor.' " It will be seen from this that the common

\*Henry Clay, "Economics for the General Reader," New York, 1920, p. 284.

assumption in China that low wages mean low-priced products is by no means true. A prominent British employer of labor in Shanghai made the statement, at a public meeting, in February, 1922, that among the English managers of cotton mills in Shanghai it is commonly said that one Lancashire workman is equal to three Chinese workmen. In a recent report upon ocean shipping\* the statement is made that the average white workman in the fireroom of a ship will handle 6,700 pounds of coal per day and that the average Chinese workman will handle 3,600 pounds per day. On the other hand we have such statements as the following, which is a translation of a part of a news item in a Shanghai newspaper†: "One thing which is greatly admired by foreigners is the work done by our Chinese laborers. One day when the war was hot two parties of workers were set to dig two trenches. Both parties were of the same number and both trenches were of the same length. One party was composed of the soldiers of a certain country and the other of Chinese laborers and both parties started their work at 8 A.M. The former finished their work at two o'clock in the afternoon while the latter, the Chinese laborers, had completed their work two hours earlier."

\* *Ocean Shipping*, Washington, 1917, 2nd edition, 64th Congress, 2nd session, House of Representatives, Document No. 2112, p. 53.

† *Shen Pao*, Nov. 17, 1919. Report of a speech by Dr. Waung Kyung-tshung, who was in France with Chinese laborers.



The general opinion, however, is that Chinese labor is less effective than the labor of foreign workmen. This, of course, is due to a variety of causes. American and European workmen, for example, have more and better machinery to work with.

Upon the supply side we must take into account the size of the population. In Chapter Sixteen an excellent study of Chinese population is reprinted. We must consider not only the size of the population, but the proportion which is actually at work. Custom may keep men of certain classes from work and laws may prevent others from working. The whole subject of the relation of the population to the supply of labor is of first importance in China, for most observers are of the opinion that the low wages of China are the result of the great and growing population. Such customs as early marriage and the worship of ancestors bring unmistakable economic effects.

Those who do not look below the surface see in a rising standard of comfort the reason for expecting higher wages in China in the future. Most of those who adopt this viewpoint do not see that this must be brought about by the effect of the standard of living upon the supply of labor. If it is clear that the standard of living means the wants that must be satisfied before the worker marries and brings children into the world, this statement is reasonable enough. If this is not clearly seen, the statement is meaningless.

The scarcity of labor in certain occupations is apparent to all. This scarcity may be due to the rarity of ability of a particular kind, to the trouble and expense of acquiring a technical education, or to other causes.

The study of the distribution of the workers in the various classes and grades of occupation is important. Efforts to prepare young men, by vocational and professional education, for the occupations where labor is scarce, should be encouraged. Such schools as those which train engineers and business men and doctors of medicine are bringing about a desirable re-distribution of the population.

The problem of geographical distribution must also be considered under this heading of the supply of labor.

We begin now to see the difficulty of putting the explanation of wages into a single, short sentence. Professor Ely has pointed out that wages will tend to be fixed at the point where the supply of a particular kind of labor and the demand for it are in equilibrium. A consideration of the matters that have been dealt with under demand and supply will enable the student to see more clearly the forces that make wages what they are, for a particular workman in a Shanghai flour mill for instance.

In this and the next chapter the readings selected will give the student some information on this difficult problem. For a full statement of the theory of wages the student is referred to the standard works on the general subject of economics.

### 43. The Use of Chinese Laborers in the War, and the Results for China\*

*By T. I. Zung*

#### RESULTS FOR CHINA

Now these laborers are returning to their native land, bringing with them, let us presume, new ideas, new talents, new habits, and a full purse. What then could they do for China? How would they affect her political, social, and economical situation?

#### (1) A TECHNICAL AID FOR CHINA'S INDUSTRIAL DEVELOPMENT

In the industrial renaissance upon which China is embarking, one of the difficult problems which she has to confront is the lack of Western technical knowledge requisite in industrial enterprises. This deficiency has long been supplied by students trained abroad along professional lines, not seldom at the expense of the firm by which it is intended that they should be employed. But the expenditure required is enormous; hence the opportunity is necessarily limited only to a few.

The use of Chinese laborers in the war opens up new possibilities. These laborers, working as they did in modern factories equipped with the most up-to-date apparatus, acquired incidentally the technical knowledge

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\*Excerpt from an article of this title, by Zung Tsoong-iung, in *The St. John's Echo*, October, 1920, Vol. XXXI, No. 7. Reprinted by permission.

which they otherwise would either lack the means or initiative to obtain—which, however, at once gives a tremendous impetus to the progress of young China's industry. It is gratifying, moreover, to note that some of the laborers have remained in France as half-students.

As such they work half of the day in the factory, while they devote the other half to vocational education, sustained by the wages they derive from their labor. At present the movement has received little support from the Chinese Government, but it is certainly to be encouraged. While the present industrial rehabilitation in Europe needs their aid, the immense contribution which they will confer on China's industrial development is incalculable.

It is also to be expected that the return of Chinese laborers will bring machinery into more general use. The system under which the native industries work is deplorable. No machinery except the most primitive tools are employed. With industries running on a very small scale, the unit being the family, foreign machinery is out of the question. The latter, moreover, is regarded with a superstitious awe which even out-weighs its numerous advantages. Of course we do not mean to devolve upon the returned laborers the duty of effecting an industrial reform or introducing the factory system. These belong more to the province of the capitalists. But when we say we can trust to them the work of "machinery propaganda," we hope we are not expecting too much from them.

## (2) ELEVATION OF THE SOCIAL POSITION OF LABOR

The war has dignified the social position of labor as nothing else did. The significant rôle labor played in the war has been emphasized elsewhere. We now have to recognize that labor is not a commodity for which we can pay a price: it is entitled to social dignity as well as a share of the profit.

It is needless to dwell upon the contemptuous attitude which the Chinese society, built on traditions and customs, assumes towards labor. Any superficial occidental observer could perceive it at a glance. About the Chinese laborer history is silent. Chinese history at best is a biography of kings and courtiers and scholars; and the humble laborer is not allowed to stain its sacred pages.

With the return of the Chinese laborers and the recognition of the importance attached to the development of China's industry and natural resources (which must rely on efficient labor), the old-time conception, it is hoped, may undergo an evolution. We have pointed out at the beginning that we owe our share in the war to the Chinese laborers. And we can not better discharge this debt than by granting them due dignity in society. Then the returned laborers, as we have mentioned, were educated and enriched on account of the war, and education and wealth will of themselves enforce dignity, for of what else does social respectability consist?

And they will bring their influence to bear upon their compatriots: the result will be that they will set

the whole mass of laborers and of the society that environs it to work, leavening their respective minds, so that the one will insist on its dignity being recognized, and the other will acquiesce to its reasonable claim, to the end that the social position of labor will be permanently raised.

The elevation of the social position of labor, however, entails an acceleration in the rise of the cost of living. It is a delusive fancy common in society that social respectability requires the enjoyment of certain extraneous luxuries from which it would be better for the laboring class to abstain. The considerable opulence which has attended many of the returned laborers encourages them to enjoy such luxuries which they otherwise could hardly afford. In addition they will introduce foreign usages and pleasures from the land whence they returned, and such usages and pleasures will necessarily be costly in China. These habits will soon be copied by their comrades at home. The change may result in mischief. It is absurd to suppose that the laborers will return to their farms or their original prosaic trade, earning a living much lower than that to which they were accustomed. But China's industrial development is not—and will not be, so long as the present political unrest dominates—on a par with the sudden influx of so many technical hands. And this unhappy circumstance, coupled with their advanced cost of living forms a depressing prospect for the future of Chinese labor.

## (3) LABOR ORGANIZATION

An essential condition to effect social elevation of labor is efficient labor organization, whereby the laborers can find a common vent for their complaints and claims, and the public may have a tangible object to deal with.

Trade-unions and labor organizations are in vogue in the West, and it is natural to suppose that the laborers returned therefrom, having witnessed what tremendous benefits such associations confer on the laboring interests, will propagate the régime to their comrades at home. How far their influence will gain sway we at present do not venture to predict. But there are distinct\* "signs of the times" that point to this direction.

When, in June, 1919, an inundation of telegrams was sent to the Chinese Delegates in the Peace Conference at Paris, the Chinese Labor Unions were included among the signers thereof. This, as Dr. M. T. Z. Tyau emphasized,\* "is a noteworthy sign of the times." Then there are others. Last September an association was formed at Shanghai called\* "The Union for the Improvement of Chinese Labor," having for its objects the rendering of mutual service and protection among laborers and "the betterment of labor conditions in China by placing all trades under its jurisdiction." Among recent events† the celebration of May Day,

\* "The Future of Chinese Labor," by Dr. M. T. Z. Tyau, published in *The Far Eastern Republic*, March, 1920, pp. 19-23.

† Celebrated at Shanghai, on May 1st, 1920. The meeting was not a successful one. After encountering enormous difficulties in securing a place for meeting, the meeting was allowed to endure for five minutes, after which it was dissolved by the Chinese police force and a contingent despatched by General Ho, Acting Defense Commissioner of Shanghai.

which, though frustrated by the civil authority, is yet none the less significant. Furthermore, we have evidence that the returned laborers must in a large measure be responsible for these labor activities, for such things were\* "unknown before the war."

Let us interpret these signs. Borne down for centuries by capitalistic subjugation and imperial bigotry, the Chinese laborer has for the first time raised his head to catch glimpses of the spirit of the new age. The hidden stream of democracy has worked its way to the proletariat class, inciting among the workers a political consciousness which finds expression in political activities hitherto unexampled. More than that, the laborers are now conscious of their power and importance. They rise to demand their rights; they feel that the capitalists are not the only ones who demand and do not concede.

These are indeed happy signs, in a country like China where the laborer falls little short of the slave. But there are questions which suggest gloom†:—"Will strikes be fashionable hereafter? . . . How about the infiltration of Bolshevik ideas among the Chinese labor elements? Will not the knowledge of the comparative legal immunity of trade-unions, brought by the Chinese

\*Dr. Tyau, speaking of the signature of the Labor Unions in the telegrams sent to the Chinese delegates, said, "As far as the writer's memory goes, such a thing was unknown before the war."

†Questions started by Dr. Tyau in "The Future of Chinese Labor," which, however, he did not answer.



laborers returning from France, provide a Damoclean sword to hang menacingly over the head of the Chinese community?" They are pressing questions to which experts have not been able to give definite answers. But we will say this much:—if labor organizations be the forerunners of strikes, the returned laborers are not to be blamed. What they did is to introduce the system of labor organization to the Chinese labor, and so far as we admit that that system is good, our returned laborers are to be thanked. As to whatever excesses it may be guilty of, the fault must rest with those who run the organizations. Of the Bolshevik charge, however, the returned laborers are not to be so easily acquitted. The seeds of Bolshevism have been widely scattered in the West, and it is more than probable that a fraction of the Chinese laborers might have been intoxicated by that noxious doctrine. Then they might be propagandists; but we hope they may not be the employed agents of the Soviet Government. The problem of Bolshevik menace in China is a preplexing one, and it would be out of place to enter upon a lengthy discussion of it here.

#### (4) LABOR EMANCIPATION

We are not more grateful to the employers of the Chinese Labor Corps than for the educational work which they undertook for its members. The importance of a liberal education for laborers (which of course does not mean mere book-learning) can not be exaggerated.

Liberal education for them means emancipation—the emancipation from their delusive craving for luxuries as an essential constituent of social dignity; from their fallacious reliance on the omnipotence of the strike; from their credulity in the chimerical benefits of Bolshevism; from their innocent follies and simplest neglects in hygiene with which they are killing themselves; from the religious superstition by which they are bound.

Emancipation from the former three delusions must take time. The world itself is unable to furnish at present the example of a labor organization so perfect and so approaching the ideal as to have freed itself entirely from their influence. But the Western laborer, under the auspices of his employer, has made distinct advance in hygienic care of himself in the last quarter century. And we have reason to hope that the returned laborer will introduce hygienic practices widely to the community in his immediate neighborhood, so that such an article as toothpowder—which he was first urged to use when he landed in France—may become a daily necessity in the household even among the lowest caste of people.

Of his religious emancipation we are not so sure. The Chinese race is notorious for religious conservatism and prejudice. Wherever the Chinaman goes, he carries his idol with him. However, we have heard of a number of Chinese laborers that were baptized—which means a distinct breach in the old superstitions. Whether

the Chinese laborer will be an evangelist, or is still the blind follower of his ancestral traditions we can not definitely assert.

### CONCLUSION

The labor problem is one of the issues that arise from the war. Section XIII of the Labor Convention of the Peace Treaty states thus:--

(1) *Labor should not be regarded merely as a commodity or article of commerce.*

(2) *The right of association for all lawful purposes for the employed as well as for the employ*

This is the position and right which the world has now granted to its labor, the Chinese labor—which has attained a brilliant record in the war and already known world-over as an industrial worker of high efficiency—certainly included. Such is the gist of the manifold results of the use of Chinese laborers in the war for China: labor organization, labor emancipation, and the elevation of the social position of labor, if we may except the technical aid they furnish. The world has granted this position and right to labor, but the Chinese laborer is too remote from “the supreme judge of the world” to hear its voice. It remains for the returned laborers to bring the message across land and ocean to their native country, and to teach their less favored brethren to act up to their newly possessed privileges.

#### 44. The Chinese Laborer from the Point of View of an American Manager\*

*By K. J. Corkery*

Chinese labor, its cost, and its supply, taken with the manufacturer's desire to produce as near his center of distribution in the East as possible, causes the manufacturer to locate in China. The fact that Shanghai is controlled by foreign law-makers, thus eliminating possible interference from sometimes avaricious government officials, also, that the manufacturer is protected by police under foreign supervision, together with favorable transportation facilities, make Shanghai a particularly good spot in which to establish factories.

You have often heard that although Chinese labor is cheap, it is cheap labor. This is not so, for cheap labor means inefficient labor. If I should tell you that Chinese labor is better fitted to modern manufacture than American labor, you would question it. Yet that is just what I believe and I am going to try to prove to you that it is so.

By modern manufacture, I mean that each operation is specialized and that each operator is a specialist.

The time when a man was taught his trade from beginning to end is almost past. To-day each branch

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\*An address by Kirk J. Corkery to the Rotary Club of Shanghai, on Thursday, December 9, 1920. Printed in *The China Press*, Sunday, December 12, 1920.

of work is separate from every other. For example, in the old days a shoemaker was taught shoe-making from the hide-selection to the turning and heeling. To-day, there is a specialist for hide selection, a specialist for cutting, a specialist for stitching, a specialist for pulling over, a specialist for lasting, and a specialist for heeling. Each man learns a single operation, and becomes an expert in performing a single branch of the work.

Manufacturers find that if each operator does his or her work in exactly the same way, one operator using exactly the same method as every other operator, the result is a uniform product, of uniform appearance, uniform life, and uniform efficiency.

From your knowledge of both Americans and Chinese, you will agree that the American rank and file think more, have more initiative, are more ingenious, and a bit more adventurous than the Chinese. In other words, the American will take a chance where the Chinese hesitates. The lack of these characteristics in the Chinese is proved by the fact that they, as a whole, are doing the same thing in the same way, using the same methods and the same materials that their ancestors used at least two hundred years ago.

This may seem to be a point in favor of the American rank and file worker, but this, also, is questionable. Character of the American sort is a very fine thing in the possession of executives and junior officers, but in the rank and file worker, it is not. If used by the rank and file, it will result in this, an

operator will think he or she can do an operation better, faster, or easier this way or that way, than by employing the established method.

It is true that many of our developments have come from the laborer himself. However, there are many ways of discovering ability in this class, and it does not take long for the employer to spot such a man and put him in a position where he will be able to use his ability to advantage.

Since uniformity is the one thing above all others striven for by manufacturers, it boils down to the fact that each operator must do exactly as he or she is taught, and must never vary from the exact procedure laid down by the man in charge. This is precisely what the Chinese do. They are taught the way in which an operation should be done and, by the way, they must be taught correctly the first time, because altering a method once established is a feat in itself. From the method taught them they never vary.

There is no thought behind their work; they are interested, conscientious and all of that, but their work is absolutely mechanical. They do the same thing over and over again, never varying, never questioning the reason why. Therefore their product is uniform to a degree little known in America.

Because of the difference in temperamental make-up of the American and Chinese operators, the manufacturer in America loses a measure of uniformity of product which the manufacturer in China acquires to a very

satisfying degree. Now, since uniformity of product is one of the highest points for which we strive, in modern manufacture, basing your judgments on your knowledge of Americans and Chinese, I believe you will agree that the latter are truly better fitted to help the manufacturer attain his desire. . . .

Three and one-half years ago, we believed the Chinese to be 50 per cent efficient as compared with American labor. To-day, we are able to produce an efficiency of almost 90 per cent. In various operations the Chinese are as high as 125 per cent. I venture to say that in another three years the Chinese will have passed the Japanese mark, and will be nip and tuck with the American operator.

You must have noticed the shape of the Chinese hand, the long tapering fingers, and will agree that the hand could not have been better designed for speed in the handling of fine, delicate work.

To start with, in increasing efficiencies all direct operations should be on a piece-work basis. A very successful way of obtaining an increase is to take the highest production per operator obtained in a single department, for example; say, 2,000 net per ten-hour day, and offer approximately a week's pay as bonus for the first operator reaching 2,200 net in ten hours. As soon as this figure is met, boost it another 200, and so on.

I have known this one method alone to increase efficiency 50 per cent in three months. The cost, as

compared with results, is nothing. As soon as one operator increases in production, the others automatically follow, resulting in a higher piece-work earning, and a pleased and satisfied group of operatives, and satisfaction means no labor troubles and a smaller turnover of help.

Another method of obtaining efficiency increases is in taking advantage of face. You all know what face means to the Chinese. If handled properly, this is probably the greatest asset to the employer. To excel in anything means much to the Chinese. Therefore to boost production in any department, we have the individual operatives' production taken each hour, and the operative having the highest production for that hour has a star placed over her machine. The operative totaling the highest production for the week has a Chinese flag hung above her machine. As there is little patriotism among the Chinese, we have had to teach them that the Chinese flag to the Chinese should mean the highest and best possible. Consequently, possession of this flag causes the gain of much face by the operative, and the amount of competition existing in the striving for this emblem, and the star, would surprise you.

As production increases, operating costs decrease. Then there is shrinkage or loss due to breakage. This branch is under the jurisdiction of the foremen and instructors of the various departments. Again due to natural care actual breakages are lower in China than



in America. Shrinkage curves are posted in each department and the percentage losses of the best factories of America are taken as the objective for that particular department. This objective is indicated by a gold line on a chart. Then the percentage losses of that department for the week are posted, and if the department has reached the objective, a gold star is mounted above its chart. This is another case where the leaders of the department obtain face throughout the entire organization, for the gold star indicates that they are capable individuals.

In addition to this gaining of face, if the objective is reached every week for a month the foreman and his assistants are paid bonuses. No more increases in salary are given, but the amount of the bonus is increased instead. In this way men in charge of the departments must produce satisfactory results every month to obtain what is in reality an increase. There is nothing that can be done with American labor that cannot be duplicated with Chinese, in fact there are many things that can be done in China that would be out of the question with American labor to-day. . . .

Because the Chinese have been trained to learn things from the actual doing, rather than from books, a Chinese operator will learn an operation and come along to 50 per cent efficiency so much more quickly than an American operator that it would seem quite beyond belief, but from 50 per cent to 70 per cent is a long hard pull and from 70 per cent to 90

per cent requires much time and a whole lot more patience.

Now all this is my opinion of the good side of Chinese labor. There is another. There is the problem of provincial disputes. This is not serious unless it happens between the people of the northern provinces and those of the south. For example, a Cantonese and a Shanghai man have an argument and, it would seem automatically, the northerners line up on one side and the southerners on the other. The man in charge should never try to find out which is to blame, but should smooth things over and in a short time the trouble will be forgotten, but under the surface is a strain that may break through at any time. If a decision is made, one side feels that it has been wronged, and immediately takes steps, as soon as it is outside, to square matters. That is a serious proposition.

Although there are labor guilds in China, I believe Chinese labor to be farther advanced than American labor fifty years ago, but within the next ten years labor in the post districts will assume the same attitude toward capital as in foreign countries unless the employer acts wisely. Of course the difference in living standards would somewhat ease the situation. The Chinese laborer at present knows nothing of the strength of his brother in a foreign country, but the employer knows from experience and observation just what conditions can develop. If these conditions are allowed to arise it will be absolutely the fault of the employer. It is his.

privilege and duty to avert these crises and he can do so by studying and keeping ahead of living costs, by furnishing opportunities for education and recreation, in short by voluntarily promoting the general welfare of his employees in China, as he has been obliged to do in America.

## CHAPTER XVI

### POPULATION

#### 45. An Inquiry into the Population of China\*

*By W. W. Rockhill*

##### I

From the earliest times of their history the Chinese have made every few years enumerations of the adult population of the Empire. The history of the census in China may be divided into two parts. During the first, extending from the first recorded count in the twenty-third century B.C. down to 1712 A.D., with a few exceptions, the number of tax-paying households alone was recorded. In the second period the total number of individuals is purposed to have been taken.

In the first period the census was made solely for the purpose of levying the taxes, and there is every reason to believe that the local officials systematically kept the returns forwarded to the central Government below the real figures, so as to divert to their own use as much of the taxes levied as they possibly could. In the

\*An article by William Woodville Rockhill in the Annual Report of the Board of Regents of the Smithsonian Institution for the year ending June 30, 1904, Washington, Government Printing Office, 1905. Reprinted by permission.

second period, that reason no longer existing, it became a matter of pride with the officials, as well as good policy, to swell the returns of population.

There is much uncertainty as to the number of individuals contained in each recorded "household" or *hu*, and whether by the word "individual" (literally "mouth," *k'ou*) is to be understood male adults, or both sexes, or persons of all ages—exclusive of infants—who have never been included in the enumerations of any period. In the time of Mencius (fourth century B.C.) the "family" (*chia*) was supposed to comprise eight mouths (*k'ou*). This was the number of persons whom 100 mow (about 15 acres) of medium land were computed to support.\* Under some dynasties (as the Han) it would seem that the "household" comprised from 4.8 to 5.2 individuals; in others, the T'ang, for example, it rose to 5.8. During others, as the Sung, it was only a fraction over two persons, according to Sacharoff,† though Biot‡ contends that in this period it was a fraction more than 5 persons, as in the preceding period of the T'ang. Under the Yuan dynasty, according to Amiot, the "household" comprised 5 persons, and in the succeeding Ming dynasty it seems to have varied from about 5 to over 6.6. Even during the present dynasty we are in grave doubt as to the numeric value of the term *hu* ("household," "family").

\*Mencius, bk. 1, pt. 1, Ch. VII, 24.

†Hist. Uebersicht der Bevölkerungs-Verhältnisse China's, p. 157.

‡Journal Asiatique, 1836, t. I.

Father Amiot and other foreign writers have thought it represented 5 persons, de Guignes\* says 2 to 3, but in the opinion of E. H. Parker it averaged 6 persons.† In the census of 1842, which gave the number of households and of individuals, the former averaged 2.3 persons to the family; and in a census of the city of Peking for 1846 it averaged 3.1. I am disposed to accept 4 as a fair figure for enumerations for the eighteenth and nineteenth centuries.‡

During the Han dynasty, from A.D. 1 to 156, we have 10 enumerations.\*\* The first, taken in A.D. 1, gave 12,233,062 "households" and 59,594,978 "individuals." The last, taken in 156, gave 16,070,906 "households" and only 50,066,856 "individuals." The territory over which these censuses extended did not vary appreciably during the whole of this period of one hundred and fifty-five years; it was substantially the same as at the present day. The population during this century and a half was nearly stationary.

In A.D. 606, when China was again united under one rule, what has been held by western writers to be a very careful census was taken. It again gave the population of the Empire at about 55,500,000.††

\* "Voyage à Peking," III, 69.

† In Japan the average number of persons by household, which often includes several families, was 5.55 at the close of 1898.

‡ It is true that in the case of the prefecture of Wen-chou, in Chekiang, it was found in 1881 that the average number of persons per home was about 5.14, and in the case of Ch'ung-k'ing in Szech'uan in 1877 a detailed census of the city gave about 4.3 persons to a family (E.C. Baber, "Journ. of Explor. in West China," p. 25).

\*\* Ma Tuan-lin, "Wen-hsien t'ung-k'ao," bk. 10.

†† See Biot, op. cit., pp. 451, 452.

During the seventh, eighth, and ninth centuries, although a considerable number of enumerations of the people are recorded, they are so confused that it is impossible to fix with more than the roughest approximation the population at that time of China proper, which then covered about the same area as at present. The census which appears to have been the most carefully made was that of the year 756. It gave 8,814,708 families and 52,919,309 individuals for the free population, exclusive of infants and very old people; it included the kingdom of Korea. The total population in A.D. 756 may therefore have been about 61,000,000. Biot, using the census referred to in this paragraph, has calculated the average yearly increase of the population of China proper between A.D. 650 and 755, and found it to have been about 0.0063 per cent.

During the eleventh century, when the Empire was again united under the rule of the Sung, we have ten enumerations of the population, that of the year 1080 showing evidence of having been the most carefully taken. It gives the number of households of freeholders (*chu*) and tenants (*k'o*) as 14,852,686 or 33,303,889 individuals. No matter how numerous we allow the exempted and unenumerated classes to have been, it is not conceivable that they could have more than doubled this number; so we may, I think, safely assume that at the end of the eleventh century the population of China proper was not much more than 60,000,000, the same as in the middle of the eighth century.

Biot has calculated the average yearly increase during the Sung dynasty (A.D. 976 to 1102) and found that from 976 to 1021 it was about 0.02 per cent, and from 1021 to 1102 only 0.0103 per cent, or 0.015 per cent during these one hundred and twenty-five years.

In 1290, at the end of the Mongol conquest of China by Kublai Khan, a census of China proper gave 13,196,206 households of 58,834,711 individuals. Admitting that vast numbers of Chinese had been reduced to slavery by the Mongols and countless thousands had been killed, the population at the end of the thirteenth century can hardly have been much in excess of 75,000,000.

During the Ming dynasty there were no fewer than 21 censuses between 1381 and 1578. The highest figure of the recorded population during this period was 66,598,337 individuals in 1403, and the lowest 46,802,995 in 1506. The last census, that of 1578, taken at a time when the country was extremely prosperous and enjoying general peace, gave the population as 63,599,541.

While agreeing with Sacharoff that the various censuses of this period are not of a trustworthy character, I believe they may be considered sufficiently accurate to show that during the fifteenth and sixteenth centuries the population of China increased very slowly, certainly not more rapidly than during previous periods of its history.

The following returns of the detailed censuses of 1393, 1491, and 1578 are taken from the Annals of the



	1393		1491		1578	
	Households	Individuals	Households	Individuals	Households	Individuals
Ssu-ch'uan.....	215,719	1,466,778	253,803	2,598,460	262,604	3,102,073
Kiang-hsi .....	1,553,923	8,982,482	1,363,629	6,549,800	1,341,005	5,889,026
Hu-kuang .....	775,851	4,702,660	504,870	3,781,714	541,310	4,393,785
Che-kiang .....	1,138,225	10,487,567	1,503,124	5,305,843	1,542,408	5,153,005
Fu-kien .....	815,527	3,916,806	506,039	3,106,060	515,307	1,738,709
Kuang-tung .....	675,699	3,007,932	467,390	1,817,384	530,712	5,040,655
Kuang-hsi .....	211,263	1,482,671	459,640	1,676,274	218,712	1,186,179
Shan-tung .....	753,894	5,255,876	770,555	6,759,675	1,372,206	5,664,099
Shan-hsi.....	595,444	4,072,127	575,249	4,360,476	596,097	5,319,359
Ho-nan .....	315,617	1,912,542	575,249	4,360,476	633,067	5,193,606
Shen-hsi.....	294,526	2,316,569	308,644	3,912,370	394,423	4,502,067
Yün-nan.....	59,576	259,270	15,950	125,955	135,560	1,476,692
Kuei-chou .....	.....	.....	43,367	258,693	43,405	290,972
Ching-shih.....	.....	.....	304,055	3,448,977	334,691	4,258,453
Nan-ching .....	1,912,914	10,755,948	1,511,953	7,993,519	2,069,067	10,415,861
Total .....	9,318,078	58,619,228	9,161,417	56,055,676	10,530,664	63,599,541

Ming.\* It must be noted that that of 1393 has no returns for several provinces of the Empire.†

Between the founding of the present Manchu dynasty (A.D. 1644) and 1734 we have enumerations of the population by households for nearly every year. E. H. Parker has extracted them from the Tung hua lu for the years between 1651 and 1860.‡ From 1651 to 1730 they are as follows for every tenth year:

	Families
1651, taxed population . . .	10,633,000
1660, taxed population . . .	19,088,000
1670, taxed population . . .	19,396,000
1680, taxed population . . .	17,095,000
1690, taxed population . . .	20,364,000

\*Ming Shih, Bks. 40 and 43.

†It is interesting to note that nearly all European writers of the latter part of the sixteenth and seventeenth centuries, such as Trigault, Matteo Ricci, Herrada, Martin Martini, Semedo, Mandelslo, and Osbeck, give approximately the figure of the census of 1578 as that of the population of China in their time, some of them stating that it included only adult males or "fighting men." I can find no authority for this in any Chinese work. Gemelli Careri ("Voy. Round the World," Pt. IV, 326) made out the population of China at the end of the seventeenth century to be 59,788,364 men, "exclusive of women, children, paupers, officials, literati, army, the imperial clan, etc." He gives the number of families as 11,502,872. The figures, both of individuals and of households, are substantially those of the census of 1578. He cites no authority for his statement concerning classes of the population not included in the census. I am inclined to believe he took his figures and this statement bodily from Athanasius Kircher or Father Martin Martini, but they in turn furnish no authority for their belief that the recorded population was exclusively composed of male adults.

‡E. H. Parker, A Note on Some Statistics Regarding China, *Journal Royal Statistical Society*, XII, pt. 1, pp. 150-156. Du Halde, Description, etc., II, p. 14, referring to the early enumerations of the present dynasty, states that the taxpayers were the adult males only between the ages of twenty and sixty.

	Families
1700, taxed population . . .	20,411,000
1710, taxed population . . .	23,311,000
1720, taxed population . . .	24,720,000
1730, taxed population . . .	25,480,000

In the case of the census of 1720 we are told that there were, exclusive of the taxed population, 309,545 families free from taxation, and 851,959 families in that of 1730. Parker notes that "evidence clearly shows" (but, as usual with him, he does not go to the trouble of giving any) "that the numbers given above must be multiplied by six, and not by five, as was done by Amiot, in order to obtain the number of individuals." Pending production of evidence, I shall follow Father Amiot's views on this point, and would add 2 per cent for the tax-free families, which include officials, literati, the army, etc. On this basis we find that the taxed population of China proper in 1651, during the troublous times which accompanied the establishment of Manchu supremacy, was about 55,000,000—just about the number we should have assumed it to be had we to deduct it from the data supplied by history alone. From 1651 down to the present time the figures of the returns vary with such extraordinary rapidity, so unlike anything we have noted in the whole long list of earlier Chinese enumerations, that one is inevitably brought to look on them as fanciful and far remote from the truth.\*

\*De Guignes ("Voyage à Peking," Vol. III, pp. 56-86), after a study of the Chinese census returns of 1743, 1761, and 1794, concluded that they were exaggerated, and also that the figure five adopted by the missionaries to ascertain the number of persons in a family was too high by half. He calculated the population of China proper in 1789 at 150,000,000 as a maximum.

In 1712, an imperial edict ordered that the number of families (24,621,334) given in the enumeration of the preceding year should remain the invariable basis for the assessment of the crown taxes, and that all subsequent censuses should give the total number of inhabitants. Nevertheless, it was only in 1741, after repeated orders had been given by the Imperial Government, that a return was made of the total population of China. According to it the population was 143,412,000. For 1743 we find in the Institutes of the Ta Ch'ing dynasty (Ta Ch'ing Hui-tien) a detailed census of the seventeen provinces—corresponding to the eighteen of the present day—but again given by households. This census gave the total number of households (*hu*) as 28,877,364, comprising 143,621,460 individuals, or about 4.8 persons to a household. To this number, which corresponds very closely with that given for 1741, Amiot would add 493,075 individuals for unenumerated officials, 2,470,000 for the literati, and 4,115,325 for the army. To this again he would add some 50,000,000 for the civil employees of Government, the monks, nuns, brigands, vagabonds, troglodytes, etc., with which, he says, China is full. Here I think he is unquestionably wrong, for the civil employees were included either in the already accounted for class of officials, or in the general returns,\* while as for monks, nuns, etc., the number was unquestionably so small

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\*Ta Ch'ing Lü-li, 3rd Div., Bk. I, Sec. LXXVI, provides for the registration of persons in the civil and military services.

that it may be omitted in such a rough estimate as we are attempting to reach. We may adopt the number 143,000,000 individuals as a maximum for the total population of China proper in 1743.

The various estimates of the population made by the Government of China since 1743 are contained in the following table, in which have also been included the annual rates of increase or decrease between succeeding dates deducted from them:

[Minus mark (-) indicates decrease]

Date	Population	Annual Increase	Rate of Increase
1743 ... ..	150,700,000	.....	.....
1749 ... ..	177,089,000	4,398,167	2.90
1757 ... ..	189,920,000	1,601,375	.90
1761 ... ..	200,339,000	2,604,750	1.37
1767 ... ..	209,128,000	1,464,500	.73
1771 .. ..	213,897,000	1,192,750	.57
1776 ... ..	267,399,000	10,700,400	5.00
1780 ... ..	276,632,000	2,308,250	.86
1783 ... ..	283,094,000	6,462,000	2.34
1812 ... ..	360,444,000	2,667,241	.94
1842 ... ..	413,021,000	1,759,233	.49
1850 ... ..	414,493,000	159,000	.038
1860 ... ..	260,925,000	-15,356,800	-3.705
1882 ... ..	381,309,000	5,472,000	2.097
1885 ... ..	377,636,000	-1,224,833	-.32

The figures for 1850 and 1860 are given on the authority of the Tung hua lu. The data from which the figure for 1885 is deduced

were supplied me in 1885 by the Chinese board of revenue Hu Pu, and supplemented and completed by figures supplied by the same board to Mr. Popoff, for ten provinces for the year 1879. This enumeration, as also those for 1761, 1812, and 1882 are given in detail below. See also A. Wells Williams, *The Middle Kingdom*, I, 258.

Since the last date in the preceding table a number of estimates of the population of China proper have been made by various writers, but none of the estimates has any particular value, all of them being based on the data supplied Popoff for 1879 and 1882. E. H. Parker\* gives from Russian sources the population of the various provinces for 1894; this is the wildest guess yet made, and foots up a total of 421,800,000. In 1903 the *Statesman's Year Book* (p. 506) published a table "issued by the Chinese Government as the results of a census taken for the purpose of the apportionment of the indemnity to the powers," in which the population is estimated at 407,253,000. There is not a scintilla of evidence to show that any census was taken for the purpose stated, and, furthermore, there was no necessity for taking one, as the sums levied from the various provinces for the indemnity of 1900 were procured by indirect taxation. Here again we have nothing more than a guess of the Chinese board of revenue.

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\*China, etc., 192.

## II

An attempt will now be made to determine the value of the various enumerations of population since that of 1741, which I am inclined to believe was probably a closer approximation to the truth than were any subsequent ones, the Imperial Government being in strong, intelligent hands, its mandates executed with more faithfulness and precision than at any other subsequent period, and the Empire enjoying perfect peace. I feel confident, however, that it was in excess of the truth, for it must be borne in mind that no census such as we make in this country has ever been attempted in China. The statutes of the Empire\* require, it is true, that all families should make returns of their members, and impose punishments for failure to comply or for falsification of returns; it would therefore seem easy to tabulate these returns at any time, but experience has proved that such is not the case. In China all statements of population are largely guesswork, and where numbers are guessed they are always magnified, especially when there is no reason to keep them down, as was the case prior to the imperial edict of 1712, referred to previously.

China enjoys a salubrious climate and a fertile soil, and the people have always been extraordinarily industrious and thrifty. As a general rule the taxation

\*Ta Ch'ing Lü-li, 3rd Div., Bk. I, Secs. LXXV, LXXVI,

has been fairly equable, and life and property safe in times of peace. These conditions are all conducive to a large increase in population. There is another reason which should from the remotest times have been potent in producing a larger increase of population in China than in other countries enjoying like natural advantages. I refer to the desire of every Chinese to have posterity to keep up the ancestral worship. We find Mencius (B.C. 372-289) saying: "There are three unfilial acts, and to have no posterity is the greatest of them" (*pu hsiao yu san, wu hou wei ta*).<sup>\*</sup> Failure to support one's parents enduring poverty is only second to it, for by failing to have posterity one offends against the whole line of one's ancestors by putting an end to the sacrifices due them. To this belief is due the universal practice of early marriages which has always prevailed in China.

The exceptional checks we find to a large increase of the population are, however, quite as potent as the encouragements to its increase just mentioned. Among these, famine, floods, and pestilence have been the most constantly operating, and have arrested rapid increase more even than the losses incurred through the fearful butcheries which have throughout China's history invariably accompanied the suppression of every rebellion, the establishment of every new dynasty.

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<sup>\*</sup>Mencius, Bk. IV, Pt. I, Ch. XXVI.



Alexander Hosie in his paper on "Droughts in China from A.D. 620 to 1643,"\* or during a period of one thousand and twenty-three years, found that drought had occurred in five hundred and eighty-three years in some one of the eighteen provinces, frequently in four or five of them at the same time, and in many cases

\*Hosie's inquiries, drawn from the great Chinese work called the *T'u-shu chi ch'eng* (see Jour. Ch. Br. Roy. Asiat. Soc., n.s., XII, 51 et seq.), may be summarized as follows:

Between A.D. 620 and 700 inclusive, there were 41 years with droughts, of which two were the results of great floods.

From 701 to 800, inclusive, there were 46 years with drought. In 790 typhus raged.

From 801 to 900, inclusive, there were 43 years with drought, 8 of which were of great severity.

From 901 to 1000, inclusive, there were 60 years with drought, 13 being "great droughts."

From 1001 to 1100, inclusive, there were 68 years with drought, 6 being of long duration, 8 "great droughts," and 1 (1086-87) universal and of long duration.

From 1101 to 1200, inclusive, there are 60 recorded droughts, of which 9 were "great droughts," 4 of long duration and 5 "very severe."

From 1201 to 1300, inclusive, there were 76 droughts, of which 12 were "great droughts" and 4 "very severe."

From 1301 to 1400, inclusive, there were 59 years of drought, of which 25 were "great droughts," 4 accompanied with floods in other sections of the country, 4 with locusts, and during 6 of the droughts the people resorted to cannibalism.

From 1401 to 1500, inclusive, there were 57 years with drought, of which 36 were "great droughts," during 8 cannibalism is recorded, and during several typhus raged.

From 1501 to 1600, inclusive, there were 84 years with drought, of which 69 were "great droughts" (in A.D. 1568 it extended over 8 provinces); during several cannibalism is recorded.

From 1601 to 1643, there were 15 years with drought. In 15 years it occurred in Shan-hsi and in 11 in Che-kiang.

they were accompanied by floods, typhus, and other scourges. Frequently these droughts lasted in the same section of country for several successive years or occurred at such close intervals that the country had not time to recover from them. To cite but two cases: from A.D. 1601 to 1643 drought is recorded in some one province of China in thirty years, in fifteen of which it occurred in the province of Shansi, and in eleven in that of Chekiang.

The fearful loss of life that has marked every calamity that has visited any part of China, and the nearly incredible cruelty which has been shown in the suppression of every uprising that has taken place from the earliest days down to the present time, are unfortunately too well authenticated to be denied.

Without going back to the early annals of the Chinese for examples of the terrible mortality which has always attended natural calamities and warfare in China, a few in the last three centuries, vouched for by reliable European writers, or by foreigners resident in the country at the time of their occurrence, may be cited here.

Father Du Halde\* states that in the year 1582 "there was such a great drought in the province of Shansi, that it was impossible to count the number of those who died of starvation. There were dug in various localities some sixty great ditches. each of which held a thousand

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\* "Description," I, p. 522. The expression Wan jen k'eng is colloquially used to designate a pit into which executed criminals are thrown. See H. A. Giles, "Chin. Dict," s.v., k'eng.

corpses, and were afterwards called Van gin keng." (Wan jen k'eng), "Grave of a myriad men."

The same author\* says that on September 2, 1678, there was an earthquake in the province of Chihli when over 30,000 persons lost their lives in the town of T'ang-chou alone. On November 30, 1786, there was another earthquake in the same province, when over 100,000 persons lost their lives in Peking, and more than that number in the adjacent country.

Father Amiot,† writing from Peking, May 20, 1786, tells of a terrible drought which for the three past years had visited the provinces of Kiangnan, Honan, and Shantung. The people in vast numbers sought to reach other provinces, but thousands upon thousands died on the roads and their corpses were devoured by the survivors.

As regards the extraordinary loss of life attending military operations in China, Du Halde states‡ that in 1635 the Chinese, to defend the city of Kaifengfu in Honan against the rebels, cut the Yellow River dikes. The whole city was submerged and 300,000 persons lost their lives.

The history of Ch'ang Hsien-chung, told by Du Halde,\*\* by Father de d'Orelans,†† by Father de

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\* "Description," I, p. 543.

† "Mém. concernant les Chinois," XIII, p. 425.

‡ Op. cit., I, p. 530.

\*\* "Description," I, p. 535.

†† "History of the Two Tartar Conquerors of China," Hakluyt Society edit., p. 20.

Mailla,\* and others, is an example of what has frequently occurred in China during its long history. In the disturbed period which followed the overthrow of the Ming dynasty this person overran with his troops the provinces of Honan, Kiangnan, Kiangsi, and Szechwan. It is said that for the slightest offense not only was the offender himself put to death, but the same punishment was visited on all the inhabitants of the same street. Five thousand eunuchs were beheaded because one of their number refused to treat him as Emperor. He called some 10,000 students to the examinations at Chengtufu in Szechwan and had them all put to death. He butchered over 600,000 persons in that province alone! On leaving Chengtu to march into the adjoining province of Shensi he had all the inhabitants chained, led out of the city, and executed. Then he ordered his soldiers to put to death their own wives as troublesome impediments in time of war, and he gave the example by having his own wives executed. So reads his story. If it is not all true much of it certainly is.

Turning to the nineteenth century, always on the authority of careful European investigators, Colonel Kuropatkin (the present commander-in-chief of the Russian army in Manchuria) speaking† of the Moham-medan rebellion in Shensi and Kansu of 1861 and subsequent years, states, on the authority of

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\* "Hist. Gén. de la Chine," X, 470-479; XI, 17-28.

† "Kashgaria," English trans., p. 155.

Sosnovski, that on the occasion of the siege of Hochou in Kansu, which lasted seven months, 20,000 men were put to death by the Chinese on the fall of that place. When the neighboring town of Hsiningfu was captured, 9,000 were put to death. At the capture of Chinchí P'u, the Mohammedan stronghold, 50,000 were killed and a vast fruitful and thickly populated tract turned into waste. At Chuguchak and its environs 40,000 men perished at the hands of the Chinese, and the town was left without a single inhabitant.

Doctor Macgowan, who was residing in China during the whole of the Taiping rebellion, says of it: \* "Nine provinces had been desolated by it; flourishing towns and cities had been made heaps of ruins, and wild beasts made their dens within them, whilst fully thirty millions of people had been put to death by these ruthless robbers" (rebels and imperialists).

Another authority says: "During the first year of the great Taiping rebellion the registered population declined two-fifths, but though many millions must have perished, it is not at all likely that the numbers of 1850 (414,493,000) were more than decimated. Even then, to kill or starve 43,000,000 people in ten years would mean 12,000 a day, in addition to the 40,000 a day who (at the rate of 30 per thousand per annum) would die naturally, and would balance about the same number of

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\* "History of China," p. 575. Conf. S. Wells Williams, "The Middle Kingdom," II, 623.

births. Moreover, the rebellion covered only one-half the area of China, so that 24,000 a day is certainly nearer than 12,000.\*

The loss of life attending the two Mohammedan and the Tien-fei rebellions (1860-1875) mounted certainly to over a million. Then we have a quarter of a million killed in the suppression of the Mohammedan rebellion in Kansu in 1894-95. If we add to this terrible source of loss of population that resulting from famines and floods, the total is nearly doubled. There were great famines in 1810, 1811, 1846, and 1849, which, according to the Tung hua lu, the best official authority we have on the subject, reduced the population by 45,000,000. Although this figure may seem excessive, we know that in the next great famine, that of 1877-78, which visited only four provinces of the Empire with great severity, no fewer than 9,500,000 persons fell its victims. This figure I quote on the authority of the China Famine Relief Committee of Shanghai.

We must add to this again the loss of life that attended the great flood of 1888, when the Yellow River broke its banks and flooded nearly the whole province of Honan. According to memorials sent at the time to the Emperor, about 2,000,000 were drowned or starved to death by this catastrophe. Then there is the unknown, but certainly terrible mortality during the great drought and famine in Shansi, Shensi, Chihli, and southern

\*E. H. Parker, "China," p. 190.

Mongolia in 1892-93 and 1894. There have also been numerous epidemics of cholera and plague which have devastated sections of the Empire in the last twenty to thirty years, and still we have not exhausted the list of causes of violent fluctuations, of extraordinary loss to the population of China during the nineteenth century.\*

It must not be lost sight of that these figures represent only the mortality among adults; it is extremely improbable that infants were counted at all.

Popoff, in his study on the population of China,† estimates that the population of China proper not only has not increased during the period of forty years, from 1842 to 1882, but has even diminished by the considerable number of 30,942,592.

The only reliable data I have found on the subject of Chinese vital statistics are the following:

In 1880 the governor of the province of Chekiang reported‡ to the Emperor that as the result of a general census of the province taken in 1879 it was found that the population was 11,541,054.

\*I was told in 1901 by the late Li Hung Chang that over 30,000,000 Chinese lost their lives in Peking alone during the Boxer troubles of 1900. Admitting that the figure and all those here given are exaggerated, it is true beyond all doubt that the loss of the population from these causes has been fearful.

†P. S. Popoff in *Nvoe Vremya*, No. 3066, September 10, 1884. Conf. S. Wells Williams, "The Middle Kingdom," I, 270.

‡*Peking Gazette*, March 17, 1880.

Mr. Popoff, the interpreter of the Russian legation in China, was informed in 1882 by the board of revenue in Peking that the population of this same province of Chekiang was then 11,588,692, and in 1885 the same board informed the writer of the present paper that it was then 11,684,348.

As corroborative evidence of the value of these figures, we learn that Commissioner of Customs Alfred E. Hoppisley\* found by a careful report made to him by the taotai of the prefecture of Wenchow that the average number of persons per home was about 5.14, and that the total population of the prefecture was 1,841,690. "The area of the prefecture being about 4,500 square miles, the average population would therefore seem to be about 409 to the square mile in this prefecture, and thus largely in excess of the general average of the province."

The best available information concerning the area of the province of Chekiang† gives it as 34,700 square miles. Assuming, then, that the average population to the square mile is one-fifth less than in the prefecture of Wenchow (say 325 to the square mile), the total population of the province in 1881 would have been

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\*Trade Report of Wen-chow for 1881, pp. 27, 28.

†Statesman's Year Book, 1902, p. 495. It may be said that the returns for Chekiang show just the contrary of what I am seeking to prove, but it must be seen at once how fanciful must be the returns of population when the total number in a vast province is deduced from a rough count in a small district. This is substantially the method the Chinese follow.



about 11,145,000, a figure substantially agreeing with that given by the governor of the province for 1879 and that supplied by Popoff in 1882.

The population of Chekiang, according to the above figures, increased from 1879-1882—say, about three years (1880-81) from 11,541,054 to 11,588,692, or 47,638. From 1882-85 (also three years) it increased from 11,588,692 to 11,684,348, or 95,656. This would be an annual increase from 1879-1882 of 0.206 per cent, and from 1882-85 of 0.275 per cent, or an average yearly rate from 1879-1885 of 0.240 per cent—this under the most favorable possible circumstances, the country being blessed with peace and plenty during all that period and for some years previously. At this rate the population of Chekiang would double itself by natural increase in 417 years.

Newsholme,\* calculating the average birth rate and death rate for the five years 1891-95, found that in Prussia the population would double itself by natural increase in 49.2 years; in England in 59.1 years; in Italy in 65.7 years; in Austria in 74.1 years, and in France in 59.1 years, the annual increase in the period named averaging in the latter country only 0.08 per 1,000. Conditions of life in other provinces of the Empire of China are approximately the same as in Chekiang—in fact, in a number they are worse, particularly as regards the frequency of famines, floods, and epidemics; nevertheless, Chinese enumerations would have us

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\* "Elem. Vital Statistics," p. 15.

believe that the population of China increases more rapidly than in the most favored countries in the world.

In the case of China, natural increase is the only one to be taken in the line of count; immigration into China is practically nil, and emigration from China proper to other portions of the Empire, excluding Asia, has only within quite recent times become of considerable size, and even now it is not sufficient to appreciably affect the sum total of the population in the approximate count we are trying to make of it. The only migratory movements of Chinese have been from province to province of the Empire. Without going far back into the past it will suffice to mention the repopulation of the provinces of Szechwan and Yünnan after the Manchu conquest from the Hu Kuang provinces and the similar movement to Szechwan during the great Tai-ping rebellion. The emigration from Shansi into southern and eastern Mongolia after the famine of 1877-78, and that from Shantung and Chihli still going on, are the most important recent movements of population to outlying parts of the Chinese Empire. The emigration to southern Asia and to remoter parts of the world is drawn exclusively from the provinces of Fukien and Kwangtung, and though considerable, is not so large as to affect to any appreciable degree the rough figures of population we hope to establish.\*

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\*The following figures relative to Chinese emigration, taken from *Export* of April 14, 1904, a German paper devoted to commercial geography, first appeared in Gottwald's work on Chinese emigration. The greater part of the Chinese emigration originates in the southern provinces, Shantung being the only northern province that furnishes any large proportion of emigrants from China. The number of Chinese outside of China is as follows:

Very little accurate information has come to us as to the death rate in any given locality of China; in fact, the only official data I know of is the death rate in Peking during one year, 1845, for which year we have also the returns of a detailed census of the population within the Peking city walls. These were obtained by Saeharoff and published in his valuable study, cited previously. According to them the population of Peking within the walls in 1845 was 1,648,814, and the number of deaths (exclusive of infants and small children, say, under 5 years of age) during the whole year was 39,438,

Country	Number	Country	Number
Formosa .....	2,600,000	Macao .....	74,568
Siam .....	2,500,000	Burma .....	40,000
Malay Peninsula .....	985,000	Australia .....	30,000
Sunda Islands .....	600,000	Asiatic Russia .....	25,000
Hongkong .....	274,543	Japan .....	7,000
America .....	272,829	Korea .....	3,710
Indo-China .....	150,000		
Philippines .....	80,000	Total .....	7,642,660

The following figures show the number of persons that left China and Hongkong and returned during the last twenty-six years:

China and Hongkong	Left	Returned
Amoy (Fukien) .....	1,629,947	1,309,787
Swatow (Kwangtung) .....	1,794,298	1,307,744
Kiungchow (Hainan) .....	298,772	296,283
Hongkong .....	1,130,000	1,090,000

or about 23.9 per thousand inhabitants—by no means an excessive rate.

The death rate among infants, resulting from the highly insanitary conditions in which the whole population, rich and poor, throughout the Empire constantly lives, and also from female infanticide, must be exceedingly high. This latter cause of infant mortality is accountable for a considerably increased death rate in the provinces of Kwangtung, Fukien, Chekiang, Shansi, Kiangsi, Anhwei, and in most of the other provinces of the Empire in a lesser degree.\*

Everything considered—especially the fact that in a very large part of China the people live huddled together in towns and villages, and that nowhere is any attempt ever made towards sanitation or the prevention of the spread of contagious disease—it seems quite safe to put the death rate in China at 30 per 1,000 as a minimum.

### III

Let us now revert to the figures given by the Chinese government for the population at the various periods

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\*See *Jour. Nor. Ch. Br. Roy. Asiat. Soc.*, Vol. XX, p. 25 et seq. Newsholme ("Elem. Vital Statistics," p. 130) says that infant mortality in Europe is lowest in Ireland, with 164.6 in every 1,000, and highest in Russia in Europe, with 422.9 in every 1,000. It must be at least this in China. In Japan, where there exists the same desire as in China to have posterity, the average number of children to a marriage is about 3.5 (Newsholme, *op. cit.*, p. 70). I see no reason to believe that the Chinese are more prolific. In the United States, according to the census of 1900, the annual death rate of the whites, where accurately recorded, was about 17.8 per 1,000.

since 1741 and see whether the annual rates of increase are at all reasonable. This examination is distinctly disappointing; nothing less satisfactory could be conceived. Between 1743 and 1783—during which time China enjoyed extraordinary peace and prosperity, disturbed only by some uprisings of aboriginal tribes in the mountainous regions of the west, and two small rebellions, one in Shantung in 1777, the other in Shensi in 1781—no great famines or other natural calamities are recorded. Nevertheless, the annual rate of increase of the population (the enumerations being all presumably made in the same manner, with the same classes excepted) which between 1743 and 1749 was 2.90 per cent, fell from 1749–1757 to 0.91 per cent, to rise between 1757–1761 to 1.37 per cent, falling again to 0.73 per cent in 1761 and 1767, and to 0.57 per cent from that date to 1771. The next change is phenomenal: Between 1771 and 1776 it was 5 per cent, but immediately after, between 1776 and 1780 it fell, without any known reason, to 0.86 per cent, to rise again between that date and 1783 to 2.34 per cent. The average annual rate of increase during the whole period was 1.83 per cent. In Japan, where much more favorable conditions exist than in China, the average yearly increase of the population from 1872–1899 has been only 1.04 per cent.

If we accept the figures given for the population in 1741 (143,412,000) as being closer the truth than subsequent ones, and bearing in mind the reasons given

previously for and against a rapid increase of population, we may assume that the population of China proper barely doubled in the hundred years following; consequently in 1842, instead of being, as given in the official enumeration, 413,000,000, it was probably about 250,000,000.

Referring now to the extraordinary causes of mortality from 1842 down to the present day, some of which are mentioned on preceding pages, they may be tabulated as follows:

	Years	Resulting Loss of Population
Famine .....	1846	225,000
do. ....	1849	13,750,000
Taiping rebellion .....	1854-1864	20,000,000
Mohammedan rebellions .....	1861-1878	1,000,000
Famine .....	1877-1878	9,500,000
Yellow River inundation... ..	1888	2,000,000
Famine .....	1892-1894	(?) 1,000,000
Mohammedan rebellion .....	1894-1895	225,000
Total loss of adults .....	.....	47,000,000

We are therefore led to the inevitable conclusion that the present population of China cannot greatly exceed that of 1842, a conclusion reached by another line of argument in 1881 by my friend A. E. Hipplesley, in his too-brief study above referred to, and by Mr. Popoff in 1884.

The following considerations tend to strengthen this opinion: The most recent enumeration of the

population of China which can lay claim to any value is that of 1885. In it we find that the returns given for six provinces (Chihli, Anhwei, Kansu, Kwangsi, Yunnan, and Kweichow) are the same as those given in the earlier census of 1882, but which in this latter were in reality for the year 1879. A comparison of the official estimates for these provinces, with the estimates made by careful foreign investigators is highly interesting.

In the case of the province of Szechwan, which the board of revenue estimated at 71,073,730 in 1885, all foreign writers agree that it is quite impossible to believe that any such population exists or can exist in it. Its western, northwestern, and southwestern parts are extremely mountainous and very sparsely inhabited. Furthermore, the province contains no extremely populous cities. Chengtu, the capital, has about 350,000 and Chungking about 130,000.

The Lyons Commercial Mission, speaking of the year 1895-96, states its belief that the estimates of the maritime customs at Chungking for 1891 of 30,000,000 to 35,000,000 for the province of Szechwan is too low, but accepts that of from 40,000,000 to 45,000,000.\* G. J. L. Litton, writing in 1898, estimated the population of Szechwan at more than double that given in the enumeration of 1812, and put it at 43,000,000.†

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\* "Mission Lyonnaise d'explor.-commer. en Chine," 1895-1897, part II, p. 232.

†Brit. Cons. Reports, No. 457, Misc. series.

F. S. A. Bourne, also writing in 1898, says that the population of Szechwan is probably between 45,000,000 and 55,000,000. In a report in 1904 Hosie gives it at 45,000,000.\*

Kiangsi, for which the official returns give a population of more than 24,000,000 is believed by W. J. Clennell, writing in 1903, to have less than 12,000,000.† The same writer estimates the population of Fukien in 1903 at "certainly under 10,000,000," whereas the Chinese figure for 1885 is 23,502,794. As regards Yünnan, the Lyons Mission‡ puts the population in 1896 at from 7,000,000 to 8,000,000. F. S. A. Bourne, writing of Yünnan in 1896, says that "according to the best native authority the population is estimated at one-fifth of what it was before the (Mohammedan) rebellion,"\*\*\* while Litton, in 1903, thought it was "not over 10,000,000."†† The Chinese estimate of the population of this province in 1879 (the same figure is given for 1885) was 11,721,576, but only two years before that, in 1877, General Mesney‡‡ placed it at 5,600,000.

\*Brit. Cons. Reports, No. 458, Misc. series, p. 49. Blue Book; China, No. 5 (1904), p. 4.

†Brit. Parl. Blue Book; China, No. 1, 1903.

‡Op. cit., Part II, p. 129.

\*\*\*Report Blackburn Chamber Commerce, p. 91.

††Brit. Parl. Blue Book; China, No. 3, 1903.

‡‡*Jour. Ch. Br. Roy. Asiat. Soc.*, XXV, p. 483.



Kweichow, in or about 1896, was thought to have about 7,000,000 inhabitants,\* in this agreeing with the Chinese estimate.

Without going any further we see that for the five provinces above mentioned foreign investigators substantially agree that the Chinese estimates are too large by some 56,000,000. All the Chinese figures are one-half to one-third too high. I have not the least doubt that the same reduction must apply to the estimates for most of the other provinces, the error in excess increasing presumably with the density of the population. The conviction is therefore forced on me that the present population of China proper does not exceed 275,000,000, and is probably considerably under this figure.

The population of China is most unevenly distributed. In certain sections, for example, around Swatow, and in portions of Honan, Shantung, and Chihli, it is extraordinarily dense, while in others, as Kansu, Yünnan, Kweichow, and Kwangsi, it is surprisingly sparse. Guesses at the population based on partial returns for some densely populated center would give a most erroneous idea not only of the population of the province as a whole, but of even a smaller division of the country. I have traversed several times all the northern provinces of China—Chihli, Shansi, Shensi, and Kansu—and can vouch

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\* "Mission Lyons," Part II, p. 207.

for the fact that in none of them does the population exceed in numbers what the soil can easily support. The absence of easy lines of communication over which surplus produce can be easily exported, and the fact that the Chinese do not raise cattle or any domestic animals in considerable numbers, tend to restrict the areas cultivated by the farmer. It seems certain that China could support a much larger population than it now has—a condition which could not exist if the population had reached the enormous figure which imaginative writers give us. I am confirmed in this opinion by such a careful observer as F. S. A. Bourne, who, referring to the journey of the Blackburn Chamber of Commerce mission,\* which traversed the whole Yangtze Valley and southwestern China, says: "From what we have seen on this journey I should say that China could support twice her present population, and that each man might be twice as well off as he is now; and this without any revolutionary change in their present manner of life."†

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\*Rep. of mission to China of Blackburn Chamber of Commerce, 1896-97, p. 111.

†In a most interesting study entitled "Tenure of Land in China and the Condition of the Rural Population" (*Jour. Ch. Br. Roy. Asiat. Soc.*, N.S., XXIII, pp. 59-174) we find it stated (pp. 76-79) on excellent authority that "it is impossible to say with any sort of exactness what proportion of the whole soil of China is tilled by peasant owners, but probably it cannot be put at less than one-half. The other moiety is owned in great measure by retired officials and their families, the class known as the literati and gentry. . . .

ENUMERATIONS OF THE POPULATION OF CHINA, 1761, 1812, 1842, 1882, and 1885

	1761	1812	1842	1882	1885
Chihli .....	15,222,040	27,990,871	36,879,838	*17,937,000	*17,937,005
Shantung .....	25,180,734	28,958,764	29,529,877	36,247,835	36,545,704
Shanhsi .....	9,768,189	14,004,210	17,056,925	12,211,453	10,791,341
Honan .....	16,332,570	23,037,171	29,069,771	22,115,827	22,117,036
Kiangsu .....	23,161,409	37,843,501	39,646,924	20,905,171	21,259,989
Anhui .....	22,761,030	34,165,059	36,596,988	*20,596,988	*20,596,988
Fukien .....	8,063,671	14,779,158	25,799,556	25,000,000	23,602,794
Chekiang .....	15,429,692	26,256,784	30,437,874	11,588,692	11,684,948
Hupeh .....	8,080,403	27,370,098	28,584,564	33,365,005	33,600,492
Hunan .....	8,829,320	18,652,507	20,048,969	21,002,604	21,005,171
Shensi .....	7,412,014	10,207,256	10,309,769	*8,432,193	3,276,967
Kansu .....	2,782,976	15,354,875	19,512,716	*5,411,188	*5,411,188
Szechwan .....	6,797,597	21,435,678	22,256,964	67,712,897	71,073,730
Kwangtung .....	3,947,414	19,174,030	21,152,603	29,706,249	29,740,055
Kuanghsi .....	2,078,802	7,313,895	8,121,327	*5,151,327	*5,151,327
Yunnan .....	3,402,722	5,581,320	5,823,670	*11,721,576	*11,721,576
Kweichow .....	11,006,640	23,046,999	5,679,128	*7,669,181	*7,669,181
Kiangsi .....	190,257,423	360,440,395	26,513,889	24,534,118	24,541,406
			413,021,452	381,309,304	377,636,198

The figures given in the censuses of 1761, 1842, 1882, and 1885 were supplied to Father Amiot, Sacharoff, Popoff, and Rockhill by the Chinese Board of Revenue. Figures in the returns for 1882 and 1885 marked with an asterisk are those given to Sacharoff for the year 1879. They are the latest official estimates.

The figures given under the census of 1812 are taken from Sacharoff whose authority was presumably the official Ta Ch'ing Hui-tien.

Considerable tracts of land are owned by such families, and it is the invariable rule in these cases to lease the land to small farmers. In the central and populous parts of China these holdings are exceedingly small, often less than an English acre, seldom larger than 3 or 4 acres. . . . Most lands yield one or more subsidiary crops in the course of the year, besides the principal crop. . . . On the frontier provinces, where the soil is poorer and the population more sparse, the size of the holdings is in general much larger than in the central provinces, and the people would seem as a rule to be better off. But as population increases there seems everywhere to be a strong tendency for holdings to become reduced to the minimum size that will support a single family. The more fertile the soil the smaller the farms and the more minute the subdivisions. How marvelously fertile the soil is under favorable circumstances will be seen from the fact that 1 mow (6.6 to an acre) will support one individual. On this basis a square mile is capable of supporting a population of 3,840 persons."

## CHAPTER XVII

### INTEREST

#### INTRODUCTION

The present writer has not found, after a fairly long and diligent search, a satisfactory study of interest and interest rates in China. This chapter is, therefore, limited to a single selection from a Western textbook in elementary economics. This selection is an excellent presentation of the fundamental principles that must be known and understood by the student. The idea that interest is a payment for the use of money is so generally held that the student must not leave the chapter until he has mastered the reasoning of the authors on this point and is thoroughly convinced of the fallacy of an attempt to explain interest in this way.

Professor Kale, in his work on Indian Economics,\* makes the statement that the rate of interest is high in India. He quotes, with evident agreement, a "Report on High Prices" in which the statement is made that the rate of interest is 36 per cent for agricultural loans in Bengal and 37½ to 75 per cent in Eastern Bengal. In other provinces it is said to vary from 6 to 100 per cent. The authors of the report did not venture to

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\*V. G. Kale, "Indian Economics," Aryabushan Press, Poona, 1918, pp. 389, 390.

come to any conclusion as to whether the rate has increased or decreased, but they state the general opinion that it has decreased somewhat in most of India.

It will probably be found that in China there is great variation in the rates of interest on agricultural loans. An inquiry in a district of Chihli Province that suffered from the famine of 1920-21 brought out the fact that rates on such loans varied from 3 per cent a month to 6 per cent a month. Information from Fukien Province is that the rate varies from 30 to more than 100 per cent.

Rates of interest upon industrial capital are also high, but here there is a lack of information. A prominent Shanghai business man stated in a public meeting that business men in Shanghai were making some sacrifice when they purchased the debentures of the Shanghai Municipal Council, paying 7 per cent. When he was asked his opinion as to the usual return upon investments in industrial plants around Shanghai he stated that it was about 20 per cent. Information as to the dividends paid upon investments in industry outside of Shanghai shows that the rates are considerably higher.

Another source of information about interest rates that is available in most countries is the rate of interest upon government securities. The domestic loans of the Chinese government have, however, been too varied in price, as the result of reckless issue and

attempts at refunding and consolidation, to enable conclusions to be drawn. Bonds bearing six per cent are said to have been issued at less than forty dollars and for a time these bonds were purchasable in Shanghai at eighteen dollars.

No more exact statement need be attempted than the general one that the rate of interest in China is extremely high. Some of the reasons for this high rate are obvious. There is, for example, comparatively little investment in industry. The student will do well to read the selection that follows with this question in mind: How, by each of the different theories of interest that are set forth, is the high rate of interest in China to be explained?

#### 46. Different Theories of Interest\*

*By Ely and Wicker*

Land and labor, in their broadest sense, are the only original elements in production. Of course, as has been explained, land includes not only building lots and farming land, but also mines and rivers and fisheries, and, in short, all natural and unproduced agencies of production other than labor. Capital, on the other hand, is not a primary or original factor, but a secondary or derived one.

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\*From "Elementary Principles of Economics, Revised," Richard T. Ely and George Ray Wicker, The Macmillan Company, New York; 1918. Reprinted by permission.

Unlike land, capital is produced, but it is produced for the purpose of further production. In fact, we may define capital as the *produced instruments of production*.

*How Interest Is Determined.*—Interest is the return to capital. By what law is its amount determined? This question has been continually discussed and still appears to many economists an unsettled problem. The ancients in general denied that interest rested on any justifiable foundation. Aristotle thought it unjust, and Cicero classes it with murder. Throughout the middle ages it was condemned by the Church and prohibited by statute. One of the main reasons for this attitude is found in the fact that until recent centuries little capital was lent for productive purposes. Loans were usually made for personal consumption and for the relief of the distressed. The lender could not have used productively the amount lent, and the borrower did not desire the loan for productive uses. Despite public opinion and the law, however, the taking of interest continued customary wherever commerce was developed, and with the industrial awakening in the modern period of capitalism it was, of course, allowed as a necessity.

Being allowed, it must needs be justified, and the explanations and justifications have been numerous and various. Earlier economists explained the laws of rent and wages, and then naïvely concluded that capital had what was left. The owner of capital was thus made



the "residual claimant" in distribution. Others have thought that capital and land receive returns according to fixed laws, and that labor is the residual claimant. The truth seems to be that no one of the three is the residual claimant, but that each receives a return determined by regular laws. What, then, shall we say is the special law by which interest is determined? In answering this question, we shall try to make a statement of the case which shall reconcile conflicting theories, at the same time that we indicate briefly what those theories are.

*Fallacious Views Regarding Interest.*—To begin with, let us clear the ground by ridding the mind of certain views as to interest that are very widely held and that stand squarely across the path leading to just and clear views on the subject.

There is a very widespread opinion that the payment of interest to individual owners of capital is necessary to any accumulation of capital. This is clearly not so. If society were to take over and manage all industry, or the greater part of industry, it could create and maintain the needed capital out of the product of the industry. Society as a whole would in that case postpone possible present satisfactions for the purpose of easier and richer satisfactions from the resulting capitalistic production. It may well be that we do better to leave the accumulation of capital to the self-interest of individuals, but we have no right to think or to assert that capital can be secured in no other way.

Another fallacy, perhaps as widely held, and even more obstructive to just views of capital and interest, is the idea that interest is fundamentally an amount of money annually paid for the use of some larger amount of money. Of course, on the surface this seems to be true; otherwise, the idea would never have gained credence. But a little reflection will show the fallacy and the harm in the fallacy. In the first place, it will be found that actual money is rarely lent, borrowed, or repaid. What is transferred is control of wealth,—some form of purchasing power. As has been explained in an earlier chapter, a business man goes to his bank and sells his note, secured or unsecured, in exchange for a deposit. Against this deposit he draws checks at need to purchase needed goods, and especially capital in various forms. The bank pays out little gold or silver. In so far as it cannot balance checks against checks and so avoid payment, it pays out various forms of notes which are themselves merely credit instruments. Thus it is clear that when men borrow, they do not usually or really borrow money at all, but only purchasing power.

But again, such purchasing power, as the name implies, is not the real purpose or end of the borrowing. Nearly all borrowing has as its end the securing of capital,—real, physical, capital goods, to be used in the work of production. If it were just as convenient to supply the capital goods in the first instance, the business man would rather have it so. And if capital

could be so lent and borrowed, men could not have fallen into certain of their present wrong views of interest.

Probably nine persons out of ten, perhaps ninety-nine persons out of every hundred, believe that the rate of interest depends upon the amount of money. We have already given one way by which this fallacy may be detected, but experience gives sufficient warning that further explanation is required. And here again explanation may perhaps best take the form of illustration.

Assume a society with a given quantity of *circulation medium*, and with a given quantity of capital goods. In this society John Doe is thinking of buying a cow for his dairy. At the actual level of prices he calculates how much he must pay for "keeping" the cow, including the feed, dairyman's wages, etc., and how much the milk and other products will bring in the market, at the existing price level. If, allowing for risk, depreciation, etc., he calculates that the products year by year will sell for \$3 more than "cost of keep" he can, on a 6 per cent basis, afford to pay \$50 for the cow. And if the current interest is 6 per cent, \$50 will be the normal value of the cow.

Now assume that this quantity of money is doubled, and that, in accordance with the quantity theory of money, prices are doubled, what will be the result? Doe now calculates as before, but with all *prices* doubled,—prices of feed, labor, etc., on the one side, and of milk, cream, butter, etc., on the other. And

by the same calculation as before, he finds now a surplus of \$6. Clearly then he can now afford to pay \$6 a year for the amount of purchasing power required to secure his possession of the cow. But the rate of interest will remain unchanged, both because he can now get \$100 of purchasing power as easily as he could before get \$50 of such power, and because the price of the cow has now doubled with other prices, and stands at \$100. And \$6 is 6 per cent of \$100, just as \$3 is 6 per cent of \$50.

If now we have succeeded in banishing forever from the mind of the student the fallacy that the interest rate is a function of the amount of money, we may go on to explain how interest really is determined.

*Demand and Supply.*—In the first place, it is probable that all economists would agree that interest, which expresses the annual value of the use of capital, is determined, as is all value, by the relation between the demand for capital goods and the supply of them. When there is a strong demand for a limited supply of such goods, the marginal utility of the capital will be high, and the capitalist can exact a large return in the form of interest. If the demand for capital be slight relatively, to the supply, then the rate of interest will be low. Manifestly, however, this does not carry us far upon our way. We proceed to inquire what it is that determines the demand and supply.

*The Productivity Theory.*—Investigation of the demand for capital brings us to one theory of interest

which has been widely accepted,—the “productivity theory.” To the older economists, who regarded most economic questions from the point of view of the business manager, it seemed sufficient to say the interest is paid because capital is productive, and that the amount of interest is determined by the degree of productiveness. From the side of demand we may agree that the productivity theory does give us an explanation of interest. When capital is very productive there will be a great demand for it.

*The Marginal Productivity Theory.*—In recent years a development of the productivity theory has been brilliantly advocated and widely accepted. The theory is essentially an application of the marginal utility analysis to the field of distribution. The utility of capital is not immediate, as in the case of consumers’ goods, but intermediate. We use capital not to eat or wear, but to help in making things to eat and wear. And of capital, as of labor, it may be said that the more there is of it, the less productive will any part of it be, for two reasons. First, if capital be increased while the factor with which it coöperates remains unchanged in quantity, the physical product will not increase proportionately with the increase of capital. Thus if a thousand workmen be supplied at the same task with increasing quantities of implements of production, they will, it is true, continually increase output, but not in proportion with the increase of their equipment. In the second place, the increased output will have a

less marginal utility. Products to-day are the results of widely varying combinations of labor and capital. Increasing capital, therefore, by increasing output according to the degree in which capital is important in production, will in the same varying degree lower the exchange values of those goods as compared with the others. Briefly, then, it may be stated as a law of capital: *other things being equal, every increase of capital results in a lowering of its marginal value productivity.* Adherents of this theory go on to add that in the actual world capital receives in interest an amount equal to its *marginal* productivity. While the productivity theory, and still more the marginal productivity theory, may offer for some purposes a good way of explaining why men *can* and will pay interest, it does not explain why they *must* do it.

*The Abstinence Theory.*—To understand why interest must be paid, we have to investigate the subject of the supply of capital, and this brings us first to the so-called “abstinence theory.” It has been said by some economists that interest is sufficiently explained when it is described as the wage or reward for abstinence. As we have seen, capital is the result of a special production made possible by saving. Saving or abstinence may not in any particular instance involve any great degree of suffering. Millionaires who do not consume at once and finally all that they have, are not thereby made to suffer the pangs of hunger. It may be that they would have great difficulty in consuming any large part of

their goods. But saving does mean, none the less, the consumption of less than one might consume. We cannot have capital if all men consume all the goods that they can obtain.

It may help us to understand the relation between saving and interest if we think of actual saving as being the result of varying degrees of self-denial. There are probably many persons who would rather put by part of their present goods even if they could not thus obtain interest, or even if they had to pay a slight amount for the safe-keeping of their savings. If very little capital were required, therefore, the interest rate might fall to zero, since those who wished to save would be glad to lend their goods with a simple guarantee of repayment. But if capital is highly productive and in great demand, it will not be possible to secure the desired capital from the savings of those whose abstinence represents no sacrifice. It may be that when more capital is demanded, an increase which will bring the productiveness of the capital and the abstinence necessary to its formation into equilibrium, may be effected at a rate of one per cent. Suppose the productiveness of the capital to be still further increased. Then those who wish to engage in productive enterprises will be able to pay a higher rate and will increase the demand for capital. But, other things being equal, those who would just save the needed amount of capital at one per cent must be paid a higher price if they are to undergo the added sacrifice necessary to the accumulation of

more capital. This explanation should make it clear that on the side of supply it is to the *marginal estimate* of the sacrifice represented by the *marginal investment* that the rate corresponds. We may say in conclusion of this phase of the matter, then, that interest is fixed on the side of the supply of capital at a point which just repays the sacrifice involved in the marginal investment. As has been said, this rate, thus fixed, also equalizes the sacrifice of the marginal investor with the productivity of the marginal capital in use.

*The Austrian—or Agio—Theory of Interest.*—There is to-day a very general opinion among economists that none of the theories explained above really goes to the root of the matter. We have, therefore, to explain another theory, which has in recent years received a great deal of attention. This is often called the Austrian theory, from the country of its origin. It is also frequently distinguished as the “agio” theory, from the Italian “aggio” (meaning, among other things, discount), because it finds the explanation of interest in the fact that future goods are discounted in terms of present goods, as we shall immediately explain.

We say that capital is productive and hence bears interest. But why, fundamentally, is it productive and of what is it productive? Strictly speaking, capital is not productive at all. To say that capital is productive is merely a short way of saying that human labor produces more by the use of capital than without. But granted that capital is productive in this sense, what is



it that capital produces? Generally the things that it "produces" are quite different from itself. Machines make shoes. Railways carry goods and persons. How can we compare the shoes with the machines, or the railway product with the railway equipment? Obviously, if we are to explain interest, we must claim that the aggregate value of the things produced is greater than the producing agents, and that this difference in value is the interest. But have we any right to *assume* that the value of the product is greater than the value of the agent? To be sure, we know that the difference in value exists. But, by the same token, we know that there is such a thing as interest. It is admitted, too, that the difference in value and interest are the same thing, but it is contended that the real problem for us is to explain why there is this difference in value, which is admittedly interest. Why does the value of the aggregate product of capital exceed the value of the product itself? And so, while certain economists explain that the marginal productivity theory is a sufficient explanation of the interest problem from the point of view of demand, but that it needs to be supplemented by a corresponding theory *from the point of view of supply*, other economists hold that the real explanation of interest lies deeper, and that their theory, rightly conceived, is an explanation of both the supply side and the demand side of the interest problem.

It is the position of the authors of this book that the theories explained above are partial. They are

"true" in so far as they help us to sum up and understand large numbers of economic facts in a simple way. In other words, the theories are "true" in so far as they are useful or usable. And for many purposes these theories are more "workable" than the "Austrian" theory, which we shall now explain, admitting, though we do, that that theory includes in its scope more economic facts, and rests upon a deeper, stronger, and more philosophical foundation.

What, then, is it that determines the rate which the marginal investor will regard as just repaying him for his saving or abstinence? And what is it that causes the value of the aggregate product of capital to be greater than the value of the capital itself? These questions both find a common answer in the Agio theory of interest, which is usually associated with the name of Professor von Böhm-Bawerk, one of the leaders of the so-called Austrian or psychological school of economists. To repeat our questions in another form, Why is it that men—for instance, the marginal investor—will not give \$50 now for \$50 ten years hence, even though all risk should be amply covered by insurance? Why will not the marginal investor lend his money without interest even when the loan involves no risks? And why is it that the value of goods produced by machinery, after deduction of amounts representing all other expenses of production, is found greater than the value of the machinery itself? *Simply because desire, which is the source of value, is stronger for things near than for things far away.*

Human experience in a thousand lines furnishes abundant proof of this. The wants of men are like Esau's hunger. He would rather have—he values higher—a mess of pottage *now* than a whole inheritance *in the future*. “A bird in the hand is worth two in the bush.” Distant enjoyments are vague to men's minds, while near ones are vivid and tempting. Thus it is that a man will rarely give present goods for future goods of like kind and amount, and hence *future goods are less valuable than present goods*.

Yet it becomes apparent on a moment's reflection that there is the greatest difference among men in the comparative estimates they place upon the present and the future. This is in part (1) *a matter of civilization*. Thus travelers have again and again pointed out that among primitive peoples there is the utmost recklessness and improvidence of the future. Hence, among savages, if interest were demanded or allowed at all, the rate would be very high. The comparative valuation of present and future enjoyments (2) *varies widely also among civilized men*. Some there are who are almost as reckless of the future as is the savage, while there are others who would be glad to exchange a quantity of present goods for a like quantity or even a less quantity assured to them in the future. The provident classes would therefore save even if the rate of interest should fall to a very low figure. Finally, (3) *the comparative valuation varies widely according to the affluence or wealth of the individual*. What we must have to satisfy

the pangs of hunger to-day is evidently more highly valued than the same things can be when obtainable only at a future time. Other things equal, then, the millionaire will, of course, overvalue the present less than will his poorer neighbor. The man who has an income just sufficient to satisfy his physical requirements cannot save, no matter how high the interest rate may be.

And so the Agio theory sums up for us briefly a multitude of facts bearing upon the supply of capital and the demand for it. *Saving, or investment, and productivity are alike due to differences in value between present and future goods of like kind and amount. The interest (or agio) is due to this difference. And the rate of interest equals and is determined by the marginal difference, i. e., by the difference as it exists in the minds of investors or savers and determines their marginal saving.*

Just one other concrete illustration. Suppose that with the interest rate standing at a certain point, something occurs to change the minds of the investors. Endow them all in equal degree with greater foresight of possible future pleasures and pains. At once in the minds of all there is less difference in their valuation of present and future goods. They value the future more highly, and by necessity, since value is relative, they value the present less highly than they did before. Concretely, they value the machine more highly than before; the goods produced by it day by day they value less highly. The difference between the value of the

machine and the value of its aggregate product falls. On the other hand, those who have been saving, save more, while many who have not saved before join the ranks of investors,—which means, as we have explained in an earlier chapter, that they spend more for future goods and less for present goods, thereby bidding up the price of machines, and at the same time weakening the market for the product of machinery. From this concrete statement the student may see how the difference in value of present and future goods determines at once the supply of capital and the demand for it, and, through their interaction, the rate of interest.

*Summary.*—Let us now retrace the steps we have taken and state in summary form the theory of interest which is here developed. *Interest is determined primarily by the relation between the demand for capital and the supply of it, the rate being such as will make possible the widest possible use of capital in the existing state of demand and supply. The demand for capital is determined by its marginal productivity. The supply is determined by the marginal sacrifice involved in saving or postponement of consumption. Fundamentally, supply and demand are both determined by the marginal difference in the value of present and future goods of like kind and amount, and the rate of interest equals this agio.*

## CHAPTER XVIII

### PROFITS

#### INTRODUCTION

The first fact that the student must bear in mind in approaching the subject of profits is that profits are the gains of independent business men. Profits are usually looked upon as a balance left over after deducting expenses of operation from gross income or after deducting expenses of production from selling price. But further analysis is required to explain profits as a share in distributions, to make it clear why there is a gain to the independent business man and examine the nature of the service that the independent business man renders. This further analysis is carried out in the following selection by Professor Clay.

In the introduction to the chapter on interest the lack of information on the subject was pointed out. In this chapter all that can be said is that there is almost a total absence of information. It is to be hoped that a competent Chinese student of economics who is familiar with business conditions and business organization in his own country will, before long, undertake a study of profits in China.

## 47. An Explanation of Profits\*

*By Henry Clay*

The words "interest" and "profits" are often used indifferently for the same thing; if we wish to avoid confusion we must distinguish between them. Profits are the share in the flow of wealth which goes to the owners of businesses; interest is the share that goes to the owners of capital. Profits usually include interest, since the owners of businesses usually supply some, if not all, the capital used in them; they include, however, several other important elements.

*Wages of Management.*—First, profits usually include some payment for the work of organization. The owner of a private business *works*, he gets his wages in the form of profits. He gathers together a number of specialized workers, provides them with the necessary machines and equipment, finds material to work on, and turns these isolated individuals and machines into a productive organization. The business started has to be run, the organization has to be managed, just as a machine has to be tended, and the owner-manager has to be paid by society like any other machine-tender. In a majority of cases he draws his payment for management in the form of profits. As we saw, starting a business needs a different and a higher order of ability

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\*From "Economics; An Introduction for the General Reader," Henry Clay, New York, 1920, The Macmillan Company. Reprinted by permission.

than running one, and the biggest profits are made by the starting of businesses, by discovering a new or unsatisfied want and organizing the means of satisfying it. The payment for this work may be drawn, not in annual payments, but in a lump sum, the creator of the business selling it to the public in the form of a corporation, and receiving for it, not what it cost him to build up, but the capitalized value of its earning capacity.

*Profits and Risk-taking.*—The second important element in profits is payment for undertaking risks, especially the risks involved in anticipating demand and supply. It has been shown that risks are unavoidable in a society that avails itself of the economies of the division of labor. The division of labor involves production in anticipation of demand, and fluctuations in the volume of the supply of raw material are constantly changing the value of a commodity between the commencement of the process of production and its completion. Further, it is impossible to anticipate correctly in every case what the demand will be; whenever a mistake is made in this anticipation, whenever the public want less of one thing and more of another, or something different from what has been made, there is a loss. The thing made does not fetch the price anticipated, and the owners of the business that made it bear the loss. They can bear this loss, because at other times they have made just what turned out to be wanted and got a good price for it. Profits are big when the managers of businesses



anticipate correctly what the public want and will pay for, losses are incurred when their anticipations are incorrect; in the long run the profits must exceed the losses, or the business cannot continue.

*Variability of Profits.*—Profits act as a sort of buffer between prices on the one hand, and interest, wages, and rent on the other. Prices fluctuate owing to changes in the supply of raw materials and in the demand for finished products; the worker, capitalist, and landowner want a steady price for their labor, capital, and land; the owners of businesses give them a steady price—regular wages, a uniform rate of interest, a uniform rate of rent, and take the price of the commodity made, making big profits if the price obtained for the output as a whole is good, and small profits or losses if the price obtained is bad. That it is the owners of businesses who take the chief risks is clear when we remember that they *have paid* for the labor, capital, and land before the commodity is finished, often before its price can be known, and if the commodity when made is not wanted, and cannot be sold, they cannot recover the wages, interest, and rent expended in the production of it. As we have seen, there is a tendency to separate the work of organizing or managing production from the taking of risks. The management of businesses is <sup>put</sup> into the hands of managers and managing directors, paid, like foremen, a regular wage or salary; the risks of the market are borne by the owners of the businesses. In the most highly

organized trades the separation is carried further. The businesses engaged in manufacture are relieved of the risks of the market, they work only on contract or commission, and the middlemen for whom they work specialize in the taking of risks.

*Differential Advantages and Profits.*—A third important element in profits is the income to be gained from any advantage over competitors; for any such restriction on competition prevents competition from beating down selling price to cost of production. When sellers compete freely and methods of production do not vary much from firm to firm, the price that any can get for their product will be kept close to their cost of production; the firm that tried to raise its price would simply drive its customers to other firms which were content with a smaller profit over cost of production. If, however, one firm in a trade has some advantage in production shared by none of its competitors, it can get the same price as they do for the product, and, producing cheaper, make a larger profit. So important are the variations in productive efficiency of different pieces of land that the income derived from land, rent, is usually treated separately from the income derived from capital; but "the rent of land," in Dr. Marshall's words, "is seen, not as a thing by itself, but as the leading species of a large genus." Any process, machine, or material which cheapens production gives its users a differential advantage in production and enables them to draw a "rent," so long as its use is restricted to a minority of

the firms in the trade. The desire for such profits is the chief stimulus in modern industry to the improvement of organization and the invention of new processes.

*Monopoly and Profits.*—Similarly anything of the nature of monopoly enables the monopolist to draw profits above the average. Since buyers *must* come to him, he need not fear competitors, and is not compelled, therefore, to keep his prices near cost of production. A patent is such a monopoly. To secure such monopoly, however limited, is the chief object of advertisement. The advertiser aims at so impressing the consumer's mind with the desirability of his article that the consumer will insist on having it, and will refuse all substitutes; then he exploits this conviction in the consumer's mind by charging more for the article than he could do if the consumer were not so determined to have it. A well-known brand or trade-mark, the reputation of an old established firm, a prominent situation in an important street, a special flavor in a cocoa, tobacco, or snuff, all enable the seller to obtain from the consumer a higher price than he could otherwise command, because the consumer does not adopt his usual practice of beating down prices by playing off one seller against another. The "good-will" of a firm consists in the limited monopoly the firm has of the custom of a section of the consuming public. The entangling of a poor customer in debt is a common device to secure the monopoly of his custom. All of these devices have it for their object to restrict competi-

tion, and to escape the pressure which it exerts, forcing prices down towards the cost of production.

In addition to interest, then, there are three important elements in profits: payment for management and organization; payment for undertaking risk; and the revenue that can be derived from any restriction on competition. The profits of a firm may consist of one or two of them, or may include all three; moreover, profits may or may not include interest. In every case profits are the portion of the revenue of a business which goes to the owners, and are arrived at by deducting total expenses from total receipts; but expenses include different elements in the case of different types of firms. In the case of a private firm working entirely on borrowed capital, interest on capital will be an expense and will form no part of the profits; in the case of a private firm working on its own capital entirely, interest on capital will form a large part of the profits. In the case of a corporation, interest on bonds is treated as an expense and does not appear as an element in profits, while interest on common stock is not kept distinct and so forms a part of the profits, which are distributed to the common stockholders as dividends. Again, in the case of management, the proprietor of a private firm may pay himself no salary—in the case of a small firm it is very unlikely that he will—and payment for management becomes an important element in profits. In a corporation all payment for management is made in the form of salaries

and regarded as an expense, so that it forms no part of profits. Payment for the bearing of risk and the revenue derived from restrictions on competition cannot be so easily distinguished from the other elements in the revenue of a business, and are always drawn by the owners of the business as profits.

*Variable Significance of the Elements in Profits.*—It is important to bear in mind these different elements in profits when we come to compare profits in different industries or occupations. The rate of dividend on capital is not the only thing to be considered. We must consider the difficulty and amount of work required to manage the different industries; we shall expect profits to be much higher in proportion to capital in a merchanting business that turns over its capital half a dozen times in a year, than in a railway that turns over its capital only once in ten years. We must consider the risks of the industry; if risks are great, we shall expect the rate of profit, when profits are made, to be high, in order to counterbalance the occasional losses which the nature of the business makes inevitable. To get the true rate of profits, we shall take the average earnings of a business for a number of years, and we shall deduct from the profits of successful firms the losses of unsuccessful firms. We must also know whether the trade is new; if it is new, apparent profits will be higher than they will become later, for three reasons: the risks of a new industry are less understood and the chances of loss therefore greater; the

work of organizing a new business requires greater ability than the work of running an old one, and commands, therefore, a higher remuneration; and the number of firms in a new industry will naturally at first be insufficient to meet the demand. The period of high profits in a new industry is usually preceded by a period of unremunerative expenditure on experiments, advertisements, etc., and followed by a period of depression, owing to the overproduction which the high profits induced; finally, the trade settles down, and supply is so adjusted to demand that the trade as a whole makes profits that are neither exceptionally high nor exceptionally low. In comparing the profits of different firms in the same trade, we shall look chiefly to the ability of the management, especially in anticipating demand and supply; but we shall also look to see what firms have differential advantages in production, and what firms partial monopolies.

## CHAPTER XIX

### AGRICULTURE

#### INTRODUCTION

This chapter and the two chapters that follow are devoted to certain selected economic problems. The problems that have been chosen are: Agriculture, Forestry and River Conservancy, and Transportation. Other problems might, of course, have been added while others have been dealt with in the preceding chapters. The three here presented are, however, believed to be of first importance in China to-day.

Of these important problems agriculture easily takes first place. Indeed it may be said that under this title we may include most of the economic questions that touch the lives of the great majority of the Chinese people.

It is hoped that the student, whether or not he happens to be in school or college, will be unable to read the two selections that are given first and to perceive the direct clash of opinion between the two authors without doing some real thinking of his own. These two selections deal with a fundamental social and political problem in modern China as well as with a fundamental economic problem. Here, as in so many cases, the economic and the political touch each other

and the one has a direct bearing upon the other. The fact that these selections lead the student to examine the very basis of Chinese economic and social life cannot be over-emphasized. They must be read with careful attention.

The separate problems of Chinese agriculture are many. Land tenure is one of them. Others are: the problem of rural credits, seed selection, the improvement of tools and implements, the discovery and application of better methods, the improvement of domestic animals. Then there is the problem of training in agriculture and of rural education in general. A single one of these problems is dealt with in a short selection which is to be regarded merely as an example of the many tasks that confront those who are working for the improvement of Chinese agriculture.

Finally a selection is given which provides a brief account of one method that is being tried to meet the problem of educating China's farmers. It must not be supposed that this chapter is at all comprehensive; but it will be useful if the student begins to see the magnitude and the pressing importance of the matters to which his attention is directed.



## 48. Eastern Agricultural Methods\*

*By F. H. King*

A word of introduction is needed to place the reader at the best viewpoint from which to consider what is said in the following pages regarding the agricultural practices and customs of China, Korea, and Japan. It should be borne in mind that the great factors which to-day characterize, dominate, and determine the agricultural and other industrial operations of western nations were physical impossibilities to them one hundred years ago, and until then had been so to all peoples.

It should be observed, too, that the United States as yet is a nation of but few people widely scattered over a broad virgin land with more than twenty acres to the support of every man, woman, and child, while the people whose practices are to be considered are toiling in fields tilled more than three thousand years and who have scarcely more than two acres per capita, more than one half of which is uncultivable mountain land.

Again, the great movement of cargoes of feeding stuffs and mineral fertilizers to Western Europe and to the Eastern United States began less than a century ago and has never been possible as a means of maintaining soil fertility in China, Korea, or Japan, nor can it be

\*Being the chapter called "Introduction" in "Farmers of Forty Centuries," by F. H. King—Mrs. F. H. King, Madison, Wisconsin, 1911. Reprinted by permission.

continued indefinitely in either Europe or America. These importations are for the time making tolerable the waste of plant food materials through our modern systems of sewage disposal and other faulty practices ; but the Mongolian races have held all such wastes, both urban and rural, and many others which we ignore, sacred to agriculture, applying them to their fields.

We are to consider some of the practices of a virile race of some five hundred millions of people who have an unimpaired inheritance moving with the momentum acquired through four thousand years ; a people morally and intellectually strong, mechanically capable, who are awakening to a utilization of all the possibilities which science and invention during recent years have brought to western nations ; and a people who have long dearly loved peace but who can and will fight in self-defense if compelled to do so.

We had long desired to stand face to face with Chinese and Japanese farmers ; to walk through their fields and to learn by seeing some of their methods, appliances, and practices which centuries of stress and experience have led these oldest farmers in the world to adopt. We desired to learn how it is possible, after twenty and perhaps thirty or even forty centuries, for their soils to be made to produce sufficiently for the maintenance of such dense populations as are living now in these three countries. We have now had this opportunity and almost every day we were instructed, surprised, and amazed at the conditions and practices

which confronted us whichever way we turned; instructed in the ways and extent to which these nations for centuries have been and are conserving and utilizing their natural resources, surprised at the magnitude of the returns they are getting from their fields, and amazed at the amount of efficient human labor cheerfully given for a daily wage of five cents and their food, or for fifteen cents, United States currency, without food.

The three main islands of Japan in 1907 had a population of 46,977,003 maintained on 20,000 square miles of cultivated field. This is at the rate of more than three people to each acre, and of 2,349 to each square mile; and yet the total agricultural imports into Japan in 1907 exceeded the agricultural exports by less than one dollar per capita. If the cultivated land of Holland is estimated at but one-third of her total area, the density of her population in 1905 was, on this basis, less than one-third that of Japan in her three main islands. At the same time Japan is feeding 69 horses and 56 cattle, nearly all laboring animals, to each square mile of cultivated field, while we were feeding in 1900 but 30 horses and mules per same area, these being our laboring animals.

As coarse food transformers Japan was maintaining 16,500,000 domestic fowl, 825 per square mile, but only one for almost three of her people. We were maintaining, in 1900, 250,600,000 poultry, but only 387 per square mile of cultivated field and yet more than

three for each person. Japan's coarse food transformers in the form of swine, goats, and sheep aggregated but 13 to the square mile and provided but one of these units for each 180 of her people; while in the United States in 1900 there were being maintained, as transformers of grass and coarse grain into meat and milk, 95 cattle, 99 sheep, and 72 swine per each square mile of improved farms. In this reckoning each of the cattle should be counted as the equivalent of perhaps five of the sheep and swine, for the transforming power of the dairy cow is high. On this basis we are maintaining at the rate of more than 646 of the Japanese units per square mile, and more than five of these to every man, woman, and child, instead of one to every 180 of the population, as is the case in Japan.

Correspondingly accurate statistics are not accessible for China but in the Shantung province we talked with a farmer having 12 in his family and who kept one donkey, one cow, both exclusively laboring animals, and two pigs on 2.5 acres of cultivated land where he grew wheat, millet, sweet potatoes, and beans. Here is a density of population equal to 3,072 people, 256 donkeys, 256 cattle, and 512 swine per square mile. In another instance where the holding was one and two-thirds acres the farmer had 10 in his family and was maintaining one donkey and one pig, giving to this farm land a maintenance capacity of 3,840 people, 384 donkeys, and 384 pigs to the square mile, or 240 people, 24 donkeys, and 24 pigs to one of our forty-acre farms.

which our families regard too small for a single family. The average of seven Chinese holdings which we visited and where we obtained similar data indicates a maintenance capacity for those lands of 1,783 people, 212 cattle or donkeys and 399 swine,—1,995 consumers and 399 food transformers per square mile of farm land. These statements for China represent strictly rural populations. The rural populations of the United States in 1900 was placed at the rate of 61 per square mile of improved farm land and there were 30 horses and mules. In Japan the rural population had a density in 1907 of 1,922 per square mile, and of horses and cattle together 125.

The population of the large island of Chungming in the mouth of the Yangtze River, having an area of 270 square miles, possessed, according to the official census of 1902, a density of 3,700 per square mile and yet there was but one large city on the island, hence the population is largely rural.


It could not be other than a matter of the highest industrial, educational, and social importance to all nations if there might be brought to them a full and accurate account of all those conditions which have made it possible for such dense populations to be maintained so largely upon the products of Chinese, Korean, and Japanese soils. Many of the steps, phases, and practices through which this evolution has passed are irrevocably buried in the past but such remarkable maintenance efficiency attained centuries ago and

projected into the present with little apparent decadence merits the most profound study and the time is fully ripe when it should be made. Living as we are in the morning of a century of transition from isolated to cosmopolitan national life when profound readjustments, industrial, educational, and social, must result, such an investigation cannot be made too soon. It is high time for each nation to study the others and by mutual agreement and coöperative effort, the results of such studies should become available to all concerned, made so in the spirit that all should become coördinate and mutually helpful component factors in the world's progress.

One very appropriate and immensely helpful means for attacking this problem, and which should prove mutually helpful to citizen and state, would be for the higher educational institutions of all nations, instead of exchanging courtesies through their baseball teams, to send select bodies of their best students under competent leadership and by international agreement, both east and west, organizing therefrom investigating bodies each containing components of the eastern and western civilization and whose purpose it should be to study specifically set problems. Such a movement, well conceived and directed, manned by the most capable young men, should create an international acquaintance and spread broadcast a body of important knowledge which would develop as the young men mature and contribute immensely toward world peace and world

progress. If some broad plan of international effort such as is here suggested were organized the expense of maintenance might well be met by diverting so much as is needful from the large sums set aside for the expansion of navies, for such steps as these, taken in the interests of world uplift and world peace, could not fail to be more efficacious and less expensive than increase in fighting equipment. It would cultivate the spirit of pulling together and of a square deal rather than one of holding aloof and of striving to gain unneighborly advantage.

Many factors and conditions conspire to give to the farms and farmers of the Far East their high maintenance efficiency and some of these may be succinctly stated. The portions of China, Korea, and Japan where dense populations have developed and are being maintained occupy exceptionally favorable geographic positions so far as these influence agricultural production. Canton in the south of China has the latitude of Havana, Cuba, while Mukden in Manchuria, and northern Honshu in Japan are only as far north as New York City, Chicago, and northern California. The United States lies mainly between 50 degrees and 30 degrees of latitude while these three countries lie between 40 degrees and 20 degrees, some seven hundred miles further south. This difference of position, giving them longer seasons, has made it possible for them to devise systems of agriculture whereby they grow two, three, and even four crops on the same piece of ground each



year. In southern China, in Formosa, and in parts of Japan two crops of rice are grown; in the Chekiang province there may be a crop of rape, of wheat or barley, or of Windsor beans or clover, which is followed in midsummer by another of cotton or rice. In the Shantung province wheat or barley in the winter and spring may be followed in summer by large or small millet, sweet potatoes, soy beans, or peanuts. At Tientsin, 39° north, in the latitude of Cincinnati, Indianapolis, and Springfield, Illinois, we talked with a farmer who followed his crop of wheat on his small holding with one of onions and the onions with cabbage, realizing from the three crops at the rate of \$163, gold, per acre; and with another who planted Irish potatoes at the earliest opportunity in the spring, marketing them when small, and following these with radishes, the radishes with cabbage, realizing from the three crops at the rate of \$203 per acre.

Nearly 500,000,000 people are being maintained, chiefly upon the products of an area smaller than the improved farm lands of the United States. Complete a square on the lines drawn from Chicago southward to the Gulf and westward across Kansas, and there will be inclosed an area greater than the cultivated fields of China, Korea, and Japan and from which five times our present population are fed.

The rainfall in these countries is not only larger than that even in our Atlantic and Gulf states, but it falls more exclusively during the summer season when



its efficiency in crop production may be highest. South China has a rainfall of some 80 inches with little of it during the winter, while in our southern states the rainfall is nearer 60 inches with less than one-half of it between June and September. Along a line drawn from Lake Superior through central Texas the yearly precipitation is about 30 inches but only 16 inches of this falls during the months May to September; while in the Shantung province, China, with an annual rainfall of little more than 24 inches 17 of these fall during the months designated and most of this in July and August. When it is stated that under the best tillage and with no loss of water through percolation, most of our agricultural crops require 300 tons to 600 tons of water for each ton of dry substance brought to maturity, it can be readily understood that the right amount of available moisture, coming at the proper time, must be one of the prime factors of a high maintenance capacity for any soil, and hence that in the Far East, with their intensive methods, it is possible to make their soils yield large returns.

The selection of rice and of the millets as the great staple food crops of these three nations, and the systems of agriculture they have evolved to realize the most from them, are to us remarkable and indicate a grasp of essentials and principles which may well cause western nations to pause and reflect.

Notwithstanding the large and favorable rainfall of these countries, each of the nations has selected the one

crop which permits it to realize not only practically the entire amount of rain which falls upon its fields, but in addition enormous volumes of the run-off from adjacent uncultivable mountain country. Wherever paddy-fields are practicable there rice is grown. In the three main islands of Japan 56 per cent of the cultivated fields, 11,000 square miles, is laid out for rice growing and is maintained under water from transplanting to near harvest time, after which the land is allowed to dry, to be devoted to dry land crops during the balance of the year, where the season permits.

To anyone who studies the agricultural methods of the Far East in the field it is evident that these people, centuries ago, came to appreciate the value of water in crop production as no other nations have. They have adapted conditions to crops and crops to conditions until with rice they have a cereal which permits the most intense fertilization and at the same time the insuring of maximum yields against both drought and flood. With the practice of western nations in all humid climates, no matter how completely and highly we fertilize, in more years than not yields are reduced by a deficiency or excess of water.

It is difficult to convey, by word or map, an adequate conception of the magnitude of the systems of canalization which contribute primarily to rice culture. A conservative estimate would place the miles of canals in China at fully 200,000 and there are probably more miles of canal in China, Korea, and Japan than there

are miles of railroad in the United States. China alone has as many acres in rice each year as the United States has in wheat and her annual product is more than double and probably threefold our annual wheat crop, and yet the whole of the rice area produces at least one and sometimes two other crops each year.

The selection of the quick-maturing, drought-resisting millets as the great staple food crops to be grown wherever water is not available for irrigation, and the almost universal planting in hills or drills, permitting intertillage, thus adopting centuries ago the utilization of earth mulches in conserving soil moisture, has enabled these people to secure maximum returns in seasons of drought and where the rainfall is small. The millets thrive in the hot summer climates; they survive when the available soil moisture is reduced to a low limit, and they grow vigorously when the heavy rains come. Thus we find in the Far East, with more rainfall and a better distribution of it than occurs in the United States, and with warmer, longer seasons, that these people have with rare wisdom combined both irrigation and dry farming methods to an extent and with an intensity far beyond anything our people have ever dreamed, in order that they might maintain their dense populations.

Notwithstanding the fact that in each of these countries the soils are naturally more than ordinarily deep, inherently fertile and enduring, judicious and rational methods of fertilization are everywhere prac-

ticed; but not until recent years, and only in Japan, have mineral commercial fertilizers been used. For centuries, however, all cultivated lands, including adjacent hill and mountain sides, the canals, streams, and the sea have been made to contribute what they could toward the fertilization of cultivated fields and these contributions in the aggregate have been large. In China, in Korea, and in Japan all but the inaccessible portions of their vast extent of mountain and hill lands have long been taxed to their full capacity for fuel, lumber, and herbage for green manure and compost material; and the ash of practically all of the fuel and of all of the lumber used at home finds its way ultimately to the fields as fertilizer.

In China enormous quantities of canal mud are applied to the fields, sometimes at the rate of even 70 and more tons per acre. So, too, where there are no canals, both soil and subsoil are carried into the villages and there between the intervals when needed they are, at the expense of great labor, composted with organic refuse and often afterwards dried and pulverized before being carried back and used on the fields as home-made fertilizers. Manure of all kinds, human and animal, is religiously saved and applied to the fields in a manner which secures an efficiency far above our own practices. Statistics obtained through the Bureau of Agriculture, Japan, place the amount of human waste in the country in 1908 at 23,950,295 tons, or 1.75 tons per acre of her cultivated land. The International Concession of the

city of Shanghai, in 1908, sold to a Chinese contractor the privilege of entering residences and public places early in the morning and removing the night-soil, receiving therefore more than \$31,000, gold, for 78,000 tons of waste. All of this we not only throw away but expend much larger sums in doing so.

Japan's production of fertilizing material, regularly prepared and applied to the land annually, amounts to more than 4.5 tons per acre of cultivated field exclusive of the commercial fertilizers purchased. Between Shanhaikwan and Mukden in Manchuria we passed, on June 18, thousands of tons of the highly nitrified compost soil recently carried into the fields and laid down in piles where it was waiting to be "fed to the crops."

It was not until 1888, and then after a prolonged war of more than thirty years, generated by the best scientists of all Europe, that it was finally conceded as demonstrated that leguminous plants acting as hosts for lower organisms living on their roots are largely responsible for the maintenance of soil nitrogen, drawing it directly from the air to which it is returned through the processes of decay. But centuries of practice had taught the farmers of the Far East that the culture and use of these crops are essential to enduring fertility, and so in each of the three countries the growing of legumes in rotation with other crops very extensively for the express purpose of fertilizing the soil is one of their old, fixed practices.

Just before, or immediately after, the rice crop is harvested, fields are often sowed to "clover" (*Astragalus sinicus*), which is allowed to grow until near the next transplanting time, when it is either turned under directly, or more often stacked along the canals and there saturated with soft mud dipped from the bottom of the canal. After fermenting twenty or thirty days it is applied to the field. And so it is literally true that these old-world farmers whom we regard as ignorant, perhaps because they do not ride sulky plows as we do, have long included legumes in their crop rotation, regarding them as indispensable.

Time is a function of every life process as it is of every physical, chemical, and mental reaction. The husbandman is an industrial biologist and as such is compelled to shape his operations so as to conform with the time requirements of his crops. The oriental farmer is a time economizer beyond all others. He utilizes the first and last minutes and all that are between. The foreigner accuses the Chinese of being always long on time, never in a fret, never in a hurry. This is quite true and made possible for the reason that they are a people who definitely set their faces toward the future and lead time by the forelock. They have long realized that much time is needed to transform organic matter into forms available for plant food and although they are the heaviest users in the world, the largest portion of this organic matter is predigested with soil or subsoil before it is applied to their fields, and at an enormous cost of

human time and labor, but it practically lengthens their growing season and enables them to adopt a system of multiple cropping which would not otherwise be possible. By planting in hills and rows with intertillage, it is very common to see three crops growing upon the same field at one time, one nearly ready for harvest, one just coming up, and the other at the stage when it is drawing most heavily upon the soil. By such practice, with heavy fertilization, and by supplemental irrigation when needful, the soil is made to do full duty throughout the growing season.

Then, notwithstanding the enormous acreage of rice planted every year in these countries, it is all set in hills and every spear is transplanted. Doing this, they save in many ways except in the matter of human labor, which is the one thing they have in excess. By thoroughly preparing the seed bed, fertilizing highly, and giving the most careful attention, they are able to grow on one acre, during 30 to 50 days, enough plants to occupy ten acres and in the meantime on the other nine acres crops are maturing, being harvested, and the fields are being fitted to receive the rice when it is ready for transplanting, and in effect this interval of time is added to their growing season.

Silk culture is a great and, in some ways, one of the most remarkable industries of the Orient. Remarkable for its magnitude; for having its birthplace apparently in oldest China at least 2700 years B.C.; for having been based upon the domestication of a wild

insect of the woods; and for having lived through more than 4,000 years, expanding until a million-dollar cargo of the product has been laid down on our western coast and rushed by special fast express to the east for the Christmas trade.

A low estimate of China's production of raw silk would be 120,000,000 pounds annually, and this, with the output of Japan, Korea, and a small area of southern Manchuria, would probably exceed 150,000,000 pounds annually, representing a total value of perhaps \$700,000,000, quite equaling in value the wheat crop of the United States, but produced on less than one-eighth the area of our wheat fields.

The cultivation of tea in China and Japan is another of the great industries of these nations, taking rank with that of sericulture if not above it in the important part it plays in the welfare of the people. There is little reason to doubt that this industry has its foundation in the need of something to render boiled water palatable for drinking purposes. The drinking of boiled water is universally adopted in these countries as an individually available and thoroughly efficient safeguard against that class of deadly disease germs which thus far it has been impossible to exclude from the drinking water of any densely peopled country. Judged by the success of the most thorough sanitary measures thus far instituted, and taking into consideration the inherent difficulties which must increase enormously with increasing populations, it appears inevitable that modern methods must



ultimately fail in sanitary efficiency and that absolute safety can be secured only in some manner having the equivalent effect of boiling drinking water, long ago adopted by the Mongolian races.

In the year 1907 Japan had 124,482 acres of land in tea plantations, producing 60,877,975 pounds of cured tea. In China the volume annually produced is much larger than that in Japan, 40,000,000 pounds going annually to Tibet alone from the Szechwan province; and the direct export to foreign countries was, in 1905, 176,027,255 pounds, and in 1906 it was 180,271,000, so that their annual export must exceed 200,000,000 pounds with a total annual output more than double this amount of cured tea.

But above any other factor, and perhaps greater than all of them combined in contributing to the high maintenance efficiency attained in these countries must be placed the standard of living to which the industrial classes have been compelled to adjust themselves, combined with their remarkable industry and with the most intense economy they practice along every line of effort and of living.

Almost every foot of land is made to contribute for food, fuel, or fabric. Everything which can be made edible serves as food for man or domestic animals. Whatever cannot be eaten or worn is used for fuel. The wastes of the body, of fuel, and of fabric worn beyond other uses are taken back to the field; before being taken there they are housed against waste from

weather, compounded with intelligence and forethought and patiently labored with through one, three, or even six months, to bring them into the most efficient form to serve as manure for the soil or as feed for the crop. It seems to be a golden rule with these industrial classes, that whenever an extra hour or day of labor can promise even a little larger return, then that extra time shall be given, and neither a rainy day nor the hottest sunshine shall be permitted to cancel the obligation or defer its execution.

#### 49. Permanent Agriculture and Democracy\*

*By L. H. Bailey*

The phrase "permanent agriculture" is a real contribution to the discussion of rural affairs in recent time, expressing the idea that we must be able to maintain ourselves on the planet at the same time that the earth retains its producing power for all coming generations. This phrase is important both because it demands the facts and also because it sets ideals for the future. It is the highest expression of being our brother's keeper—the brother who is yet to come. It suggests the most perfect altruism, and the truest socialism. Sometime this will be the greatest concern

\*An article of this title by Liberty Hyde Bailey in *The American Museum Journal*, Dec., 1917; Vol. 17, No. 8. Published by the American Museum of Natural History. Reprinted by permission.

of government,—in the time when the concern of government coincides with the primary concern of mankind.

It has been said that permanent agriculture has been developed in the Far East. I have recently returned from the Far East, where, with King's sympathetic book, *Farmers of Forty Centuries*, in mind, and with opportunities to learn something of the rural situation in China in a few parts of the republic, I received certain impressions and the reflections therefrom are the subjects of this address.

China is a people still in its agricultural phase, and as eighty-five per cent of the population is said to be engaged in farming, the public polity must be largely a reflection of the rural situation.

At the same time, China is a land in which great numbers of people live constantly on the verge between sustenance and want, in which poverty rather than middle-class comfort-earning determines much of the life and civilization, in which the scale of living is reduced to the lowest terms for the mass of the people, in parts of which human beings may be worth less economically than beasts of burden, in which government does not reach the social and economic needs of the population, and in which the people on the land are uneducated and the ideals undeveloped. The mere statement of the situation is a challenge of the agricultural status of the country in the twentieth century, when expressed in terms of human beings.

China is a land of unnumbered people, of vast resources, of stimulating history, stagnant in the occidental commercial sense, still under its own sovereignty, trying to adapt itself to the current ways of the world, a racial complex of marvelous vitality and endurance—probably the greatest human problem on the planet. Its agricultural or rural status is the fundamental fact in this problem.

I went to China filled with the expectation of its wonderful centuries. I was to find at last an exhibition of permanent agriculture. Here is solved the problem, apparently, of maintaining the fertility of the earth. Here also is said to have been solved the problem of the greatest possible yields, of the best disposition of human waste, of the closest utilization of the land, the best conservation, the elimination, of the unnecessary accessories of life, and something like fine rural individualism.

It is difficult for an occidental to judge any situation in the Orient. He must approach the subject largely from the objective point of view, yet remember that the oriental may live in a subjective civilization.

My first impression was of waste land, and this impression grew constantly in spite of all the dissuasion of friends. The smaller the divisions of land, the greater is the wastage of the partitions. In the best-tilled parts of the coastal plain, possibly ten per cent of the land sometimes is wasted by mere embankments and division lines. Much of the land also is taken by

the grave mounds, and the unoccupied land near may be left in such small and irregular areas as to be utilized with difficulty. In the interior are vast shaven hills and mountains, swamps and flats due to uncontrolled streams and lakes, semi-deserts under no kind of effective control. One is impressed with the barrenness of the country, although the fields themselves may yield well when cropped or may not. One is impressed everywhere with the merciless skinning of the land to get every last fragment of fiber and root for fuel. He has never seen such sacrilege of the earth.

Much has been said about the use and conservation of resources in China, whereby the last fragment is saved; but this is in the nature of private scavenging and is not public conservation of natural resources. In fact, it is quite the opposite, for it looks only to the present needs and does not consider the future. It is more likely to be a vast practice of waste, looked at in the national and social sense, however well it may meet the penury of the present. It has no large result in it, no state policy, no bountiful provision for the future. It is true that definite public plans of conservation are now under way, as in forestry, and in some places they are beginning to work out excellent results; but these are modern and recent adaptations or movements, not the result of the historical experience of China.

The first duty of agriculture is to produce supplies, and to maintain the fertility of the earth while producing them; and yet the measure of agriculture is not the

yield, nor is it the maintenance of the greatest number of people on a given area of the earth's surface. Nevertheless, it is just this assumption on the part of both agricultural publicists and economists—that the test of agricultural excellence is that it sustain the greatest possible number of people—which is the underlying fallacy in present discussions. The greatest yield of agriculture is the human result, not the maintenance of given numbers.

King writes that he was “amazed at the amount of efficient human labor cheerfully given for a daily wage of five cents and food, or fifteen cents, United States currency, without food.” You well know the slaving labor that is required, the long hours of mere grinding physical toil, the slender margin of profit, the skin-and-bone existence for the mass of the folk on the land, when people by millions give themselves for five cents a day and food. It does not matter what may have been the classification of the ranks of society by Confucius, placing the farmer only second in the scale of four, unless such classification works itself out in practice with those who actually handle the land. On a basis of five cents a day and food, there can be no satisfactory agriculture.

We are not to overlook or to deny, of course, the many highly developed manual agricultural practices of the Chinese and their neighbors. The Occident undoubtedly has much to learn from these patient toilers who for tens of centuries have produced supplies

for such crowding millions and have still maintained the producing power of the earth. Their patience, persistence, and elimination of all frills and unessentials, the heavy yields in many places, the painstaking care to the smallest detail, all inspire one's admiration; it is time that these people receive larger recognition before society; yet we are now projecting the larger results in human progress. Perhaps their painstaking is most apparent in the saving of human waste and the application of it to the land; but one cannot think that this method will be the final practice in any highly developed society. We are not to solve the excrement problem on the scavenger basis, applying the raw material to the land, particularly now that we know its relation to carriers of disease. Such practices will not appeal to western peoples. If such waste is to be used for the land, it will be on the principle employed in the manufacture of commercial fertilizers or other treated and modified products, and not on the principle of the stable. Probably nowhere has the problem of the disposition of human waste been settled. Our present sewerage systems possibly are only temporary or transitory, when considered against the progress of civilization. Yet the oriental method cannot be accepted as even an approximate solution of the problem. Nor is it yet proved that human waste is capable of producing the best yields.

For the most part, the areas under cultivation in China are too small to allow a man to express himself

on them. They make him a slave to mere hand labor and doom him to a condition that has in it little hope of personal advancement. The problem China is facing in this respect, is to produce the same or at least sufficient supplies with fewer men, with men of more power, more capital and turnover in the business, more science and invention at their command, more mastery of the business, more economic and social freedom.

The acreage to the person in China cannot yet be accurately stated. King says (in the second edition) that there are "scarcely more than two acres per capita, more than one half of which is uncultivable mountain land." Yet one is impressed, in parts of the interior, with the great extent of land awaiting reclamation or at least better utilization, with the bare hills, and also with what seem to be inadequate yields. Famine is an expectation in some of the agricultural regions. For every famine in every country, indictment should be brought against the government. A good part of the population in such countries as China eventually will be utilized in the industries: the countries will pass out of their rural phase. Whether the remaining rural population can secure sufficient additional production to the person, by means of machinery and more masterful handling of resources, to sustain the entire population can be little more than speculation at this epoch. It is probable that great fertile areas of the earth will remain relatively sparsely settled and will supply the congested parts. One day we shall farm the seas. Perhaps synthetic



chemistry will contribute something to the solution of the problem. Yet whatever the final solution, we must assume that the surface of the earth and its yields must always have significance, and that a certain large part of the race must exercise the arts of keepership.

Probably we make a mistake when we assume that the present rate of increase in population is to continue on the earth. But if population is to increase to such an extent that all the people are to be reduced to existence rations, all one can say is that the farmer should not be so reduced sooner than others. Certainly the man on whom the maintenance of the race depends should not also bear the burdens and penalties of the race.

How to secure to the farmer in China or elsewhere the proper acreage so that he can afford to educate himself for his business is a very complex problem. It cannot be accomplished in a country like China without pulling up the very roots of society and the civic order. It must be a process of adjustment and growth that works itself out slowly. Whenever you touch agriculture you touch the foundations of society.

Education in agriculture means larger and better holdings. There are persons enough who would vote public funds for the farmer if he be kept in his proper sphere and disturb not the established order of things; yet the introduction of even practical agriculture into the school means that the farmer is not to remain where he is, and that the present subdivisions of the

earth are not likely to be adequate to men with more vision and more personal power.

It is not my object to suggest the ways of bringing about changes or what occidentals might call improvements in the agriculture of China: that would be presumption. I approach the subject with no desire to criticize the Chinese or to offer them remedies or panaceas, but rather to evaluate the situation in terms of the Occident. With the Chinese themselves I am in greatest sympathy, and my attitude is to learn what their situation, as a great school of experience, suggests for us.

After applying his conclusions to the situation in America the author returns, at the end of the article, to the discussion of Chinese agriculture and draws the following conclusions.

The measure of agriculture anywhere is the sufficiency of it as a source of supplies, together with the satisfactions and opportunities for a comfortable living and advancement that it offers those who engage in it. Considered from this angle, the agriculture of China is not satisfactory and therefore is not successful; most agriculture, considering the world as a whole, is neither satisfactory nor successful.

This brings us to a statement of the two theories, or at least the two practices, as to the place of agriculture in society. On the one basis, the farmer comprises a substratum of human beings whose necessity it is to provide subsistence for higher strata from which are to come the leaders, thinkers, artists, rulers. On the other basis, the farm class itself is a lateral and

coöperating factor in affairs, capable of producing leaders, thinkers, artists, rulers, a class coördinate rather than subordinate, directly related to civic needs: this is the American idea. You will agree that we cannot have a democracy on the former basis, which is the theory of the subordinate or peasant class. You will now better understand that the farmer is the fundamental fact in a democracy.

On the one basis rest autocracy, aristocracy, oligarchy, arrogancy, tyranny, stratified social systems, whatever the name of the government. On the other basis rests the possibility of free institutions. The farmer should have equal privileges with any other man to develop himself and to partake in all affairs, not to be merely a mudsill on which a superstructure may rest.

Democracy rests on the land, on such a division of it and such an ease of acquiring it and such freedom of establishing new ownerships and combinations, as will allow the farmer to buy and sell it in his own name, and assure him the economic and civic freedom to make the most of himself as a man. This is equivalent to saying that the man is more important than the crop.

By this I do not mean that every man shall be a farmer, or that in the future state of society every man shall raise his own sustenance. This socialistic notion belongs to the idyls of poetry. But a man shall not be bound and chained to a hereditary piece of land. King says that in China one sixth of an acre of good land is

ample for the maintenance of one person. No man should be sentenced to one sixth of an acre of land.

While democracy rests on the land, it does not rest on landlordism: quite the contrary. There is no aristocracy so hateful and so difficult to dislodge as the aristocracy of land. Landlordism is not agriculture; the agrarian questions in the different countries are not agricultural questions. However free a people may be politically, if a large part of the land is held by a relatively few families and beyond their reach, that people cannot be a democracy.

These many statements have come out of my reflection on the situation in China. We are told that China has a permanent agriculture: I think this is the most serious difficulty with China. If the agriculture of China is permanent, then there is no outlook for the Chinese people except that they shall remain just what they are. The same remark can be made for other peoples. If this type of permanent agriculture is to be the final practice of mankind, then there is no prospect of advancement and progress for the race as a whole. We must distinguish sharply between permanent agriculture and stationary agriculture.

## 50. The Future for Livestock in China\*

*By C. O. Levine*

*Land Available for Feed.* The production of better and more livestock must come as the country develops industrially and commercially. Good police protection, roads and railroads, a demand for export products and an increasing demand for milk, will all be incentives to the expansion of the livestock industries. There is enough grass on the hills of China, now not being utilized except for fuel, to sustain at least twice as many cattle as are being produced to-day.

Cattle sell for about one half the price they sell for in America. Better prices offered for export beef, which will come with development, will stimulate the beef industry, and the demand for milk within China itself must be met. With the present prices received for milk (12 cents to 18 cents local currency per pound) and the price at which imported butter is sold (\$1.20 per pound) there are few other industries that offer better opportunities for young men well trained in the principles of dairying and breeding and with a thorough knowledge of producing sanitary milk, butter, and other dairy products.

*Improvements of Livestock.* With the development of agricultural industries will come a demand for the improvement of different classes of livestock now raised

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\*From "Notes on Farm Animals and Animal Industries in China," Carl Oscar Levine; Canton Christian College Bulletin No. 23; Canton, China, 1919. Reprinted by permission.

in China. Three methods of improvement suggest themselves.

First and no doubt foremost is improvement within the breed, without the introduction of foreign blood. A few generations of intelligent selection of individuals for breeding purposes would greatly improve the cattle for beef purposes. Because of the small amount of milk given by native humped cows, draught and beef production will probably always remain the function of this class of cattle. Breeding for improvement without the introduction of foreign blood should be followed with all classes of livestock, no matter how extensive the use of modern breeds may become.

The buffalo in China has been chiefly a draught animal, only to be used for beef after its usefulness for work is ended. Of recent years some dairies in Canton and Hongkong have begun to use the buffalo for milk and by selection and good feeding now have cows that give more than 12 pounds of milk a day, testing from 10 per cent to 15 per cent fat. A second method of improvement is to introduce males of imported breeds for mating with native cows. Crossing the Berkshire breed of hogs with native pigs in the Philippines has made a profitable hog out of the Island runt and would no doubt also improve the Chinese hog. In Hongkong the Mid-Yorkshire hog is proving a success both crossed with native hogs and when kept pure.

Crossing native cattle with modern breeds of beef cattle should doubtless improve the native cattle for

beef purposes. However, such crossing of native humped breeds of cattle with European breeds has not proved popular in the Philippines or in India, for the reason that, while the cross produces better beef cattle, such cattle are of little use for draught. The chief reason why the native cattle are so well adapted for work is because of the hump against which the yoke fits so well. In animals containing foreign blood the hump is very small or not present at all.

A third method suggested for improvement of native livestock is to secure pure-bred animals of desirable breeds and continue to breed them pure.

The first method suggested, that of selection within the native breed for improvement, is safest, but slow in bringing results. Introducing modern improved breeds will probably bring quicker results, provided only good, healthy individuals are secured and intelligent breeding is practiced. However, the fact that disease is common here and not common in regions from which imported cattle come should be taken into consideration and this danger should be guarded against, or the result to individual breeders is apt to prove disastrous financially. Great care also should be exercised not to introduce tuberculosis along with European livestock.

*Need of Trained Livestock Men and Veterinarians.* Men trained in animal breeding and feeding are much needed in China to improve the quality of livestock by intelligent feeding, care, selection and breeding, and by introduction of foreign breeds. Veterinarians are needed.

to take up a thorough study of diseases and their control, and to build up laboratories for the producing of anticholera and anti-rinderpest serums as measures toward the prevention of these two great plagues of the livestock industry. Canton needs government livestock sanitary inspectors and adequate laws to support them, to prevent the sale of diseased meat, and above all the sale of unwholesome milk; for while the danger of eating diseased meat is serious enough, the danger of contracting typhoid fever, tuberculosis, and other diseases from contaminated milk is apparent to all. Every cow with European blood whose milk is being sold to the public should be tested for tuberculosis and reacting animals be rejected as dairy animals. Such work is the work of a veterinarian. It would not be necessary to test native cows or buffaloes as they are apparently highly resistant if not immune to the disease.

One has but to visit the dairies in Canton, with the possible exception of the Sinkee Dairy, and to note the animals kept for milk, and the insanitary conditions under which milk is produced, to realize the need of veterinary and sanitary inspections and authority to complete the production of clean milk.

Some of the dairies have good bulls of modern dairy breeds, but cannot produce good milkers because of their methods of raising calves. For the time the calves are born they are kept tied up in a barn and are never turned out to exercise even in a day lot. Naturally the cows in even the best dairies are poor milk cows, small



in size, and some with every indication of tuberculosis, and giving an average of from fifteen to twenty pounds a day of what is probably contaminated milk, while if properly cared for they might give from thirty to forty pounds of good, wholesome milk.

*Standardizing Milk.* Many dairies in Canton at present add water to the milk sold in order to increase their profits. The danger to the consumer of disease germs from impure water used is apparent, to say nothing of the unfairness to honest dairyman. Milk put on sale by the Canton dairies should be analyzed with a Babcock tester for fat and a check kept on watering milk. Buffalo milk containing less than 10 per cent fat and European cow's milk containing less than 3 per cent fat is undoubtedly watered milk, and dairymen found guilty of watering should be heavily fined. Repetition of the offense should cancel the right of such a dairy to sell milk to the public. Buffalo milk should be sold for at least twice as much as foreign cow's milk in order to remove the temptation to water such milk. It would, at such a price, be no higher in price, for the food value it contains, than foreign cow's milk.

## 51. The First Agricultural Lecture Train in China\*

*By H. K. Tong*

The first agricultural demonstration and lecture train in China departed from the Chienmen station in Peking on September 13 [1918], loaded with the best seeds for grains, cotton and other plants, other agricultural products and farming implements, and easily-read pamphlets for distribution among farmers along the Peking-Hankow Railway. It will stop at thirty-five main stations to demonstrate modern methods of agriculture, lecture on them and answer questions of a nature puzzling to Chinese farmers.

A band composed of poor children is accompanying the train for the entertainment of the population of rural districts. Tong Yau-hang, a returned student from America, is the principal lecturer, and the Ministry of Agriculture and Commerce has given him several assistants to make the mission a success. The lecture train will tour the country between Peking and Hankow for two full months, and if Mr. Tong considers it necessary to extend the time, permission will be granted by the railway authorities.

A farewell tiffin at the Kin-Han Railway Restaurant at Chienmen station was given by Dr. C. C. Wang,

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\*An article by Hollington K. Tong in *Millard's Review*, Shanghai; Vol. VI, No. 3, pp. 118, 119; September 21, 1918. Reprinted by permission.

managing director of the railway. Among the guests present were Mr. Yeh, Vice Minister of Communications, Mr. Chiang, Vice Minister of Agriculture and Commerce, and a number of department chiefs of these two Ministries and the railway itself. After visiting the exhibition cars and having their photographs taken, the first Agricultural Demonstration and Lecture Train in China was despatched on its journey.

Large-character circulars announcing the arrival of the agricultural train at various districts have been posted along the railway line between Peking and Hankow. Such a train in itself is a novelty. Although China is an agricultural nation, her farmers have always been dependent entirely upon "Heaven" and "Earth" for good crops. Whenever they reap a good harvest they consider it good luck, and poor crops the reverse.

Good farming lands are gradually being transformed into what the Chinese call "stone lands." In sending this agricultural train to tour different farming districts, the railway authorities intend to open up to farmers a new agricultural prospect and teach them the necessity of scientific farming and the use of productive and selected seeds. It is their plan to send such trains, loaded with modern farming implements, in future if this one proves a success. Assistance of foreign importers may then be solicited, as the work will be mutually beneficial. Through such practical means foreign importers can promote the sale of their farming machinery, while by the use of it farmers will be able

to double the yield of their soil. The railways will also come in for their share of profits in increased traffic.

Local authorities of the provinces of Chihli, Honan, and Hupeli have all been instructed by the Central Government to urge the farmers in their territory to assemble at main stations and wait for the arrival of the lecture train and inspect the agricultural demonstrations and lantern slides and hear lectures which will be worded in a simple manner so that illiterate countrymen can understand them without difficulty. Thousands of copies of a pamphlet written in easy Wên-li, giving detailed information on the questions of fertilization and forestry, have been printed by the Peking-Hankow Railway and will be distributed. Selected seeds will be given to farmers who want them. In one compartment of the train are exhibited grain samples, Chinese and foreign, which all will be permitted to inspect with the object of impressing upon them the possibility of modern methods of farming for rice, millet, cotton, and other plants. Lectures will be divided into three classes, one for ignorant farmers, one for students and teachers, and one for the country gentry. They will be given in the open, on the train, and in temples, according to weather conditions.

The agricultural lecturers will at the same time investigate local conditions and find out the customs and habits of farmers so that they may adapt their future lectures to the actual needs and not go against local

prejudices. Mr. Tong will be able to do this, since he has been president of the Agricultural College in Peking for more than two years and has already greatly benefited the farmers living around his college by giving to them new seeds.

America will be proud of the fact that China is following the example of the United States in this manner of agricultural education. It is in America where such agricultural demonstration and lecture trains are often despatched to tour the country and their success has been shown in the resulting better crops. They are now introduced into this oldest agricultural nation in the world and cannot but succeed. Much credit for their introduction into China is due to Dr. C. C. Wang, managing director of the Peking-Hankow Railway, Ph. D. from Yale University, who also encouraged afforestation for railway timber as well as for flood prevention along the line. Mr. Wong will also lecture on the importance of afforestation and emphasize the disaster that comes from deforestation.

Mr. Tong, in charge of the first agricultural demonstration and lecture train, holds the degree of M. S. A. from Cornell University, which institution of learning is famous for its efficiency in agricultural training. Before he went to America he studied at Queen's College, Hongkong. He arrived in America in July of 1904 and attended Cornell University, where he graduated with the degree of M. S. A. in 1908. Upon his return to China he was appointed director of the

Agricultural Experimental Station at Canton. From 1912 to 1914 he was principal of the Agricultural College in Peking, and at the same time principal of the Agricultural and Forestry College. Recently he has been appointed director of the Central Agricultural Experimental Station in the Capital.

# CHAPTER XX

## FORESTRY AND RIVER CONSERVANCY

### INTRODUCTION

The second of the economic problems mentioned in the introduction to the last chapter is taken up in this chapter. It is not sufficiently appreciated that the problems of forestry and river conservancy in China are closely connected and at the same time independent of each other. It is probably true that the final solutions of the problems are connected, but it is by no means true that the problem of river conservancy will be adequately solved by the reforestation of barren hills. The attention of the student is directed also to the important conflicts of economic interests brought out in the second of the selections, as, for instance, the conflicts between the interests of navigation and agriculture. Such conflicts as these, when they involve measures of conservancy that must be undertaken on a large scale are among the most difficult that modern governments face.

## 52. The Industrial and Commercial Importance of Forestry in China\*

*By Forsythe Sherfese*

Modern world transportation and industrialism have set up an intense international competition from which China is wholly unable, even if she so desired, to hold herself aloof. Forces far too strong for mere human powers to resist,—forces world-wide in application, which sweep aside national boundaries as long ago were obliterated the lines between the families or tribes of history,—have manifested themselves in no doubtful manner; and foreign goods already compete, and with increasing intensity will continue to compete, with the products of the Chinese homes and villages and cities. In the resulting struggle, success is conditioned upon several factors of which I will not here attempt a complete enumeration; but unquestionably high in the scale among them is to be numbered a relatively abundant and therefore cheap supply of the products of the forest.

Despite the low wages for which the Chinese laborer and artisan is willing to work, and despite his astounding industry, the Chinese manufacturer, whether on a large scale or a small one is under a severe handicap in many ways. Some of these handicaps were imposed

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\*From the article of that title in *The Chinese Social and Political Science Review*, Vol. I, No. 3 (September, 1916). By Forsythe Sherfese, Adviser in Forestry, Ministry of Agriculture and Commerce. Reprinted by permission.



upon him by conditions which are beyond the present ability of his government to relieve, but the giving of relief in the timber and fuel shortage is not only possible, but surprisingly simple and practicable. It requires no large initial investment,—in fact it could be made in great part self-supporting. Millions of acres of public lands unsuited for agriculture, but fully capable of supporting forest growth, are lying idle and unproductive. What should be done is clear. It is eminently practicable of accomplishment, and the immediate financial results and the later indirect, but not less important, benefits are absolutely certain.

Given anything like equal terms, or in fact so long as the struggle is not rendered hopeless at the outset, the Chinese laborer, artisan, manufacturer, and merchant may be expected to give an excellent account of himself. His capacities are undoubtedly great. His energy and industry are without superiors among any race, and it may be fairly doubted if they have equals. Mentally and morally also, he is quite able to stand alone. It only remains for his government to see that he is provided, or at least furnish him with the means for providing himself, with those essential conditions which are beyond his reach unaided and single-handed to attain, but which his competitors, more fortunately situated, have never been without.

In one of my first trips to the Yangtze Valley I visited a small foundry which turns out various iron utensils and implements; and I was told by the manager

that he was forced to transport his supply of charcoal a distance of no less than ninety miles, partly, it is true, by canal and river boats, but partly in baskets slung from poles across the shoulders of coolies. The timber which produced the charcoal was found only on the higher slopes and in the gorges of the mountains, where ingress and egress were difficult and slow. As no form of cart, or even animal transportation was practicable, owing to the roughness of the country, man transportation was necessary. As the timber itself was expensive (the cost being determined, if not by the selling, at least by the possibility of its ready sale for house construction, furniture, or fuel) we find that the cost per ton of the charcoal when delivered at the foundry reaches a figure that is well-nigh prohibitive, and certainly is most discouraging to the enlargement of that particular foundry, and to the establishment of other fuel-using enterprises. The cost of fuel obviously must play an important part in the operation of a foundry, and it is readily seen how severe a handicap the Chinese manufacturer suffers in comparison with his competitors in other countries, where an adequate supply is taken almost for granted. Nevertheless, in a city only a few miles from the town in which the foundry was located, I saw its products forced to sell in close competition with those from the foundries of America and Europe.

The above is only one instance of numberless similar ones which might be cited, or which will readily come to mind upon a moment's thought. Modern civilization,

no less than the less highly organized civilizations of times past, is found upon analysis to be founded upon wood as one of the three or four (or even as one of the two, iron being the second) absolutely indispensable commodities. If a choice were necessary between wood and any or all of the other materials upon which modern society and industrialism rest, with the single exception of iron, the answer would be given without hesitation. For no article whatever is produced or brought to the point of utilization without the use of wood in some process of its production, manufacture, or transportation. The abundance of forest products, therefore, and hence their cost, enters appreciably, and often very largely, into the cost at which the producer can afford to sell, and affects equally the price which the ultimate consumer is called upon to pay. To fail to provide cheap fuel and timber for the industrial element is to subject a nation to a severe handicap in the world rivalry which it has to meet to-day, and which must inevitably become increasingly close and keen in the future.

With the single exception of its forests, the natural resources of China are considered to be unsurpassed by those of any other country in the world, and to be equaled by few or none: but gratifying as that thought is, we are forced to remember that these very resources demand for their utilization the one product especially which China lacks, or possesses only in an obviously inadequate degree. China needs an extension of her existing lines

of railroad; but all trains in China are run over imported sleepers, and for the coaches themselves foreign wood is employed. The same is true of her bridges, her docks, her steamboats; and China is forced to draw upon her limited capital to import this raw, or only partially manufactured, material from abroad, and then in turn to borrow additional capital from the very exporting countries themselves.

Without the use of wood, the development of China's mineral resources is impossible, for not only must great quantities of timber be used for the construction of mine props and galleries, but transportation for the mineral itself to the point of manufacture and use must also be provided,—and transportation without the use of wood is unthinkable. However, no matter how extensively the coal deposits of China may be developed, the problem of providing fuel cheap enough to be within the reach of the middle classes and the poor would be affected only within a short radius from the mines. Up to the present time no satisfactory substitute for wood has been devised. For every hundred tons of coal mined in America, two tons of wood are needed for its extraction. Concrete structures are built in wooden frames; and despite the multitude of other substances which modern man now calls to his use, no country, however rich in coal or other minerals has been able thereby to lessen its dependence upon the products of the forest. Neither steel, nor concrete, nor anything else has so far been able to reduce the per-

capita consumption of wood which, considering the world as a whole, still constantly shows a steady upward trend.

It may safely be stated that no other natural resource has anything like so widespread an influence as the forest, or so intimately touches the daily life of so many people in so many ways. Forestry is much more than a science, such as chemistry or engineering; more than an art, such as weaving or masonry. The preservation of the forest is an essential requisite for the existence of civilization and industry as they are known to-day. The forester, it has been said, must first of all be a good citizen; meaning that the production and utilization of forest products is by no means his full, or sole, or even his most important task;—that forestry is not an end in itself, but merely a means, although a very essential means, toward the promotion of the welfare, happiness, and prosperity of the people at large. It has also been said that forestry is a yardstick by which the civilization of any country may be measured, and although, as in the case of most epigrams, it would be unfair to judge the truth of such a statement literally, still the underlying thought is fully capable of bearing analysis; for without the conditions which forests create or preserve, and without the national attitude of mind toward the conservation and utilization of all material at command that finds its expression in forest conservation, it would be difficult to imagine the rise or the continuation of any modern industrial state.

One recognized authority has declared: "By protecting mountain slopes against excessive soil wash, the forest protects the lowlands upon which this wash would otherwise be deposited, and the rivers whose channels it would clog. It is well within the truth to say that the utility of any system of rivers for transportation, for irrigation, for water power, and for domestic supply depends in great part upon the protection which forests offer to the headwaters of the streams, and that without such protection none of these uses can be expected long to endure." The effect of forests on the watersheds of streams has been likened to that of a huge sponge, which during the heavy rains absorbs a considerable portion of the excess water, and holds it in storage, to be given out slowly and fairly constantly during the succeeding periods of drought. The mechanical force of the rainfall is broken by the trees themselves, and by the forest litter which covers the mineral soil; and the soil itself is rendered more porous by the roots of the trees and the infiltrated products of decayed vegetable matter. Thus forests strongly tend to prevent both floods and droughts, or at the very least to lessen their severity. Equally important, however, is their agency in preventing soil erosion; and their influence in this respect is too well known and too universally recognized to need more than a slight reference here. In no other country has there been such great destruction wrought on so vast a scale as has occurred in China through the silting up of her rivers

with the matter washed from deforested watersheds. During a heavy rainfall the unprotected soil is washed into the rivers which are temporarily converted into raging torrents. The fields are cut by newly-formed and ever-extending gullies, or else covered with undecomposed gravel from the higher slopes. At first, near its source, the velocity of the current enables it to carry along heavy quantities of matter; but as the velocity of the water decreases, its ability to hold the silt and gravel in mechanical suspension decreases in a much greater ratio, and hence, unable to bear its burden any longer, it deposits it in the only possible place—the bed of the river itself,—and it is important to remember that it is in precisely the portion of the river where the current is less swift (and hence the deposit of silt more heavy) that navigation is practiced or desired. Thus the construction of dikes becomes necessary,—and once begun their elevation and repair becomes an unending, and almost hopeless task; for in such a race with nature she has all the elements of success on her side. Dikes, dredging, the construction of storage reservoirs, and other similar operations are at best necessary but temporary alleviatives, and the only really permanent and really satisfactory solution is to be found in the reforestation of those watersheds, the deforestation of which in the first place caused the damage from which China has for so long suffered so heavily, and from which she must continue to suffer until the prime cause is removed.

Many instances could be cited to show similar cause, effect, and remedy in other countries, and to point to the truth of the contention that such reforestation, if judiciously carried out, cannot only be made self-supporting but also to yield a most attractive financial profit on the capital so invested.

There is the temptation to call attention to the dependence of artificial irrigation upon the forest; to the influence of the forest in changing surface into sub-soil drainage and thereby influencing the water stages of rivers; to its ability to prevent the encroachment of sand dunes on the coast, and to fix wind-driven sand in the interior; to the shelter which forests, or even a few rows of trees, afford to agriculture from the cold, dry winds of winter; and to many other similar duties which the forests can be made to perform; but space and time prevent more than the merest mention here.

#### THE SOCIAL IMPORTANCE OF FORESTRY

China has long been pointed out as the shocking example of forest neglect, and it is probably true that in no other country, and certainly nowhere else on so vast a scale, has deforestation been carried to so extreme a point as throughout the great extent of Chinese territory;—and nowhere else are the evil effects more strikingly evident even to the casual passer-by than here in the oldest nation of history. The traveler, whether student or hasty tourist, by river boat or railroad, by coasting-steamer, in caravan or sedan chair,



in recording his impressions has seldom failed to refer to the barren, treeless hills and mountains along which his route lay; and I know of no study of the economic situation in China which fails to point to the extreme scarcity of forest growth, and to the tremendous losses, direct and indirect, which are thereby entailed upon the Chinese people. In most cases, such accounts have not been exaggerations, for although good stands of timber are still to be found in certain portions of the country, which for one reason or another have previously been comparatively inaccessible, it is undoubtedly true that throughout most of the provinces, and especially in the most densely inhabited sections where forest products are most urgently needed, the treeless mountains rise naked from the treeless plains; and the inhabitants in their eager search for fuel, for timber, for forest products of all kinds, have been reduced to the necessity of getting along as best they may with woefully inadequate substitutes. Among the inevitable results of such a condition are a depressed standard of living and the infliction upon the Chinese people of a bitterly severe domestic struggle.

It would seem to require no argument to show the depressing effects of deforestation upon the standard of living,—upon popular health and efficiency. History is full of incontrovertible proof, beginning with the nations and peoples of the very earliest times and coming forward in unbroken succession to the present day. We all know that tens of millions of Chinese are forced to

live in huts of poorly baked mud,—with mud floors and mud walls, thatched also with mud, or with grass or straw or reeds. While there may be (we may, probably, safely say while there generally is) abundant material near at hand suited for the making of excellent bricks, fuel is so scarce, and what little there is so urgently needed for other purposes, that the bricks are merely dried in the sun, or, if baked at all, are poorly and inadequately fired, and thus greedily suck up moisture during the rains. We know that during a wet period the houses of the Chinese poor literally reek with moisture, and that the mud roofs, already heavy in themselves, absorb so large a quantity of water that the poorly-supported, water-soaked walls can no longer sustain the weight, and the whole mass often crushes down upon the unfortunate inhabitants. We know that filth-laden moisture sometimes flows in and transforms the uneven floor into a reeking archipelago of mud. A more depressing, unhomelike, unhealthy place would be difficult to imagine. Its cause is directly traceable to deforestation, and such a condition must continue until reforestation is brought to aid.

There is also the question of domestic fuel. The moisture-laden mud house, the absence of adequate furniture, might, with an extreme exercise of philosophic patience, be regarded as mere inconveniences, heavy though they might be, were it not for their effect upon hygiene and sanitation; but the lack of fuel during the long and bitterly cold winter months necessarily entails

even more acute suffering upon the inadequately clothed poor. It has become a commonplace to call attention to the fact that in China nothing is wasted, but nowhere else has the genius of the Chinese for economy been exercised more rigidly—or with greater ingenuity—than in providing and husbanding their fuel for warmth and for cooking. We all know how in most parts of China, where the trees on the hills have long since vanished, the women and the children, by tens of thousands, spend the autumn months in eagerly digging up the roots of shrubs and plants, and in raking the dried grass and stubble to eke out the lamentably inadequate supply. We know that in some regions, for lack of forest products, dried dung must be burnt, with an indirect but none the less disastrous effect upon agriculture, upon which the very life of the people depends, for by such practices the already over-taxed land is deprived of almost its only source of fertilization. We know how, to make the fullest possible use of the heat generated by the fuel, various and most ingenious devices have been developed;—the thin-bottomed cooking utensils, stove-beds, coal-ball briquettes, etc. I do not think that anyone will argue that such ingenuity, admirable as it is, has sufficed to meet the situation forced upon the people by the heedlessness of their ancestors and the inaction of the government in times past; nor will anyone deny that the lack of physical comfort, of properly cooked and therefore properly digested food, has had and must continue to have a most

depressing influence upon the vigor and energy on which as a foundation the entire industrial life of the nation and the continuity of the people depend. Leaving aside the natural and inherent right of the people to better things (lest we be accused of fads or sentimentality), we must recognize that it is to the inhabitants of such houses, to the eaters of such food, and not to political systems or to diplomacy that China must look for the achievement of her place on the earth, in a political as well as in a commercial sense. Under such conditions is it reasonable to expect national patriotism, when a man's every hour is taken up in combating intolerable conditions of cold and hunger? Under such conditions, can he send his children to school to obtain the education upon which all popular government must necessarily rest? Under such conditions, can he afford to exercise his share of "the popular opinion" without which oppression from within or without is absolutely inevitable? If these conditions are true, do those to whom the creation of the Forest Service is due exaggerate the importance of no longer neglecting a work which is so intimately connected with the material well-being of the people, who are no longer considered mere hewers of wood and drawers of water, but the very pillars which support the structure of the state?

With adequate fuel and timber (the two principal products of the forest) it needs no arguments, no difficult stretch of the imagination, to picture a very different condition;—an immense rise in the comfort, the

standard of living, the intelligence, and the productive energy of the people. Industry and the arts along all lines would inevitably show a prompt and striking rise.

#### REASONS FOR PAST DEFORESTATION IN CHINA

In searching for the real reasons for the deforestation of China we find ourselves confronted with a mass of facts and theories which, so far as I know, has not yet resolved itself into an explanation of general acceptance. But of the various reasons which have been assigned, the ones which seem to me most deserving of attention are those advanced in a thesis presented for graduation from Cornell University by Mr. P. C. King (金邦正), a Chinese forester now engaged in active work for the province of Anhwei. He traces the present scarcity of timber in China to three main causes;—to the decay of the Chinese feudal system in the third century before the Christian era; to the *laissez faire* policy of the government; and to the numerous internal disturbances from which China has no more been free than have her sister nations of the West. Under the feudal system the great landholding nobles, as in other countries, maintained largely-forested areas for the pleasures of the chase, and for this purpose they were kept in good condition; and it is on record in the Chinese classics that they were patrolled by a regular force of forest officers. From the time, however, that the last of these feudal kingdoms was brought into subjection, the habit of hunting more or less gave way

to more secluded pleasures, and the land thus released was thrown open for exploitation. The population grew rapidly and demanded increased areas for agricultural holdings. At all events, at that time there ceased to be made appointments of forest officers, and vigorous and destructive exploitation of the forest went on rapidly until . . . these resources neared exhaustion in all except the more or less isolated portions of the country.

Under a different political theory, as Mr. King points out, the destruction of the forests upon the fall of feudalism would have been restricted, and the consequent evils would have been decidedly diminished; but through its long history the Chinese Government has always taken a comparatively uninterested attitude toward what the people were pleased to do. Except in those cases where the peace of the country might be disturbed or the safety of the Throne endangered, state interference was seldom or never resorted to. The policy of *laissez faire* was consistently followed, and thus the people in China at that time, as has happened at all times among all peoples, chose, probably unthinkingly, to sacrifice the permanency of the forest resources to their own private and immediate needs. In many of the nations of Europe, on the other hand, the fall of feudalism was succeeded by the rise of a strong and active central administration, which effectually prevented more than the partial destruction of the forests.

In so far as relates to the third cause mentioned by Mr. King,—that is, the number of internal disturbances,—

it would seem that China has been no more and no less fortunate than her sister nations. It is true that in the forty centuries of Chinese history there have been some twenty-five major revolutions and doubtless numberless minor and unsuccessful ones; and of course, as it is happening now in Europe, war always results in an enormous destruction of forest property. Other nations, however, have suffered, and are suffering, from this cause, and it seems that in hunting for the one main reason for the present deforestation in China, we must attribute it to this same *laissez faire* policy of the government, which alone has been responsible for permitting the other and contributing influences to bring about the results they did.

#### STEPS ADOPTED TO COMBAT EXISTING CONDITIONS IN CHINA

Now, probably for the first time since Chinese history dawned in the hoary ages of the past, a new idea of government functions has arisen with the establishment of the present Government, and among the many admirable and momentous effects is the increased interest in reforestation and in forest protection, which has resulted in the adoption of a definite forest policy to be carried out by the newly inaugurated Forest Service. This policy may be formulated as follows:

1. To lessen the present scarcity and high price of timber, fuel, and other forest products of all kinds by the judicious reforestation of public lands unfit for

agriculture and now lying wholly or partially idle; thereby lessening the industrial handicap under which the Chinese manufacturer, farmer, and householder labor at present, and increasing the comfort and raising the standard of living among all classes, particularly the middle class and the poor.

2. To regulate stream-flow by the reforestation of the more important river-sheds, thus tending to prevent floods, droughts, and the silting up of river-bottoms with the consequent obstructions to navigation and the frequent bursting of dikes, the construction of which, in the first place, was necessitated largely, if not wholly, by the deposits of silt, washed down from the deforested slopes.

3. To protect by technical forestry management, involving wise use, such public forest resources as still exist.

4. To encourage similar activities by private parties by demonstrating that forestry in China is an attractive financial investment, and by supplying needed advice and practical assistance.

5. To conduct a vigorous pro-forestry campaign throughout China, showing to all classes of people the present national need for forestry, what deforestation and reforestation mean individually to the people, and the steps which the Government is taking and proposes to take to better the situation.

6. To train up a corps of young Chinese to carry on the various lines of forestry work in China, and to encourage and, if possible, to assist in, the giving of



similar instruction in the educational institutions already established.

The foregoing considerations have been made not merely the subject of academic discussion in China, but active measures have been taken to translate the conclusions into actual practice.

On January 15 of this year in the yamen of the Ministry of Agriculture and Commerce in Peking, there occurred an event which, while simple and unostentatious, marks an epoch in the history of forestry, and, it is hoped, in the economic progress of modern China. This was the inauguration of the first Chinese Forest Service. It is true that there had for several years been a few spasmodic or local efforts in the cause of reforestation, some of them started by private individuals, some by educational organizations or institutions, some by the provinces and some by the Central Government at Peking, and, successful or unsuccessful as such individual projects may have proved, certainly they had and continue to have a very high value in calling popular attention to the need of reforestation and in paving the way for more systematic and extensive work. The significance of the movement which resulted in the inauguration of the National Forest Service lies in the fact that thereby the Central Chinese Government announced its definite adoption of an active, extensive policy of reforestation and of forest protection and management, stating in effect that from that time on it intended to proceed along the lines of a definite scientific

policy in accomplishing certain clearly defined ends; that henceforth all efforts and individual projects would be in accord with a uniform policy, and best of all that a personnel would be gathered together to make accomplishment practicable. Now for the first time it would be untrue to stigmatize China (as has been so freely done in the past) as the only great nation which refuses to recognize the necessity of, or which has not adopted, an aggressive forest policy. With the inauguration of the Chinese Forest Service national forestry becomes coextensive with civilization.

### 53. Conservancy Problems in Chihli\*

*By H. van der Veen*

Anyone who has been asked to say something about the conservancy questions of this vast country, must have found it difficult to select a subject, not because there are so few but on the contrary because there are so many interesting problems worth studying, as for instance the Yellow River, the Siang River near Changsha, and the Tung Ting Lake, the Hwai River, the West River, the Grand Canal, the rivers in Chihli, and many others, too numerous for me to mention them all, that it is really difficult to make a choice. However, when I was on this occasion honored with the request

\*An article in "Some Aspects of Chinese Life and Thought," lectures delivered under the auspices of the Peking Language School, 1917-18, by H. van der Veen, Consulting Engineer to the National Conservancy Bureau. Reprinted by permission.

to deliver a lecture, this difficulty did not present itself because the catastrophe of last summer [the flood of 1917] has put every other problem in the background. And so I will tell you now something about this particular question. . . .

The entire river system of Chihli is divided into five catchment basins, which are respectively drained by the Pei Ho, the Yung Ting Ho, the Ta Ching Ho, the Dze Ya Ho and the South Grand Canal, or, rather, the Wei Ho. These catchment basins together aggregate 80,000 square miles, of which about 50,000 square miles are mountainous.

Owing to the climatic conditions in these regions the rivers give only very little water during the greater part of the year, while the rainy season, that is, during the months of July, August, and September, heavy rainfalls may occur within very short periods, resulting in sudden freshets which recede as quickly as they come, leaving the river again almost dry as soon as the rain has stopped. The volume of water brought down on such occasions is considerable and would require for each river a large outlet. Unfortunately these do not exist. There is, as a matter of fact, only one outlet and that a very small one; namely, the Hai Ho. To give you an idea how insufficient this river is, let me tell you that its maximum capacity is 30,000 cubic feet per second, and that the Hun Ho alone brings down as much as about 200,000 cubic feet during freshets, and if we add to this quantity the discharge of the other

rivers it is not surprising that inundations are regular occurrences. If there had existed natural storage basins, where the water could have been held back for some time, it would not have been so bad, but there are no such reservoirs, so that all the water that comes down in excess of the volume disposed of by the Hai River has to go elsewhere and the river has no alternative but to leave its bed and overflow the country. Every year such inundations take place, usually along one or two rivers at the same time, but occasionally, by unfortunate chance, as for example last year, simultaneously along all the rivers.

Now the inadequate outlet may be the explanation for floods immediately above Tientsin and even have a bad influence on the river higher up, but cannot be the only cause of floods along the upper reaches, so there must be another explanation to account for these disasters. As a matter of fact such inundations are the result of the unsatisfactory state of the rivers themselves. That they are in such a bad condition is due to the enormous amount of silt which the freshets bring down from the mountains. All the rivers in this province take their rise in the hills west of the Peking-Hankow railway line and as these are all covered by the so-called yellow earth or loess, which even fills the valleys, a material that is easily washed away by water, the rivers carry down enormous quantities of this soil. As long as the current is strong enough to keep all the material which it took away from the hillside in suspension, no

harm is done, but on the plain the slope is much more gentle than on the hills, consequently the current weakens and drops the burden which it can no longer carry. In this way the river bed gets raised gradually to such an extent that it is no longer able to contain the amount of water which it receives during freshets, and inundations are the inevitable result, whereby not seldom the river takes an entirely new course. This is a process to which all rivers are liable more or less, and it entirely depends upon the nature of the soil in the hills where the rivers take their rise whether the plain-building, as it is called, is very marked or not.

Owing to the peculiar loess formation of which I spoke just now, plain-building is in this instance very conspicuous, I think more than anywhere else in the world. As it is, it cannot be stopped, but will end only when the hills have been washed clean or such a slope has been created that the current is nowhere too weak to keep all the soil, which the river brings down, in suspension.

Rather a hopeless prospect, is it not? Not very promising, at any rate. But if we consider, moreover, that the water, heavily laden with silt, and requiring a strong current to carry it down, is already hampered by an insufficient slope, it must be clear that an insufficient outlet, which causes an extra reduction in the velocity, makes matters still worse.

This tells in a few words why inundations take place so frequently. That under such conditions a

phenomenal rainfall, such as was experienced last summer, must cause an inundation of practically the whole plain is certainly no wonder.

Now the question is, is it possible to remove the causes which brought those conditions about, and if so, what has to be done? Yes, it is possible; for although this most deplorable state of affairs is the natural result of the excessive silt and an insufficient outlet, neither the one nor the other is natural, and both can therefore be removed, for they are due to unskillful, and at the same time perhaps reckless, interference by man.

I will explain how this is. As I have said already, the geological features of the mountains account for the fact that the rivers in this province bring down more silt than perhaps any other river. But nevertheless, if the hills had been covered with forests instead of being bare, the water would not have been able to carry out its process of erosion of the hillsides and the rivers would not have brought down more silt than is caused by scouring of the river banks. Now all these hills were once covered with vegetation. But as the people of the hills wanted land for cultivation and those in the plain, increasing in number, wanted more wood for timber and fuel, the forests that once covered the mountains became thinner and thinner until at the present time practically no trace of them is left, and the unprotected soil is left to the mercy of the rainfall and the winds. Thus during torrential showers, which

sometimes occur during the summer months, the water, rushing down the hillsides unhindered by vegetation or roots of plants and gaining in velocity and power, carries with it such an enormous quantity of soil that when the torrents arrive in the valleys below they rather resemble liquid mud than water.

It is evident, therefore, that reafforestation of those barren hills will do away with the silt evil, for not only will the soil be protected against the direct attack of the falling rain, but it will also be better able to withstand the force of the water which runs down, since it will be kept together by the roots of plants and trees. Further, a great part of the precipitation will be absorbed by the vegetation, so that the amount eventually reaching the valley will be smaller and at the same time will come down slowly and be spread over a longer period, and not, as is now the case, in fierce torrents a few hours after the rainfall, as the roots of the trees and the plants that keep the soil together form a kind of sponge that acts as reservoir and which will continue to feed the river long after the times of freshets are past.

We now come to the second principal cause of the deterioration of the rivers, and that is the insufficient outlet. I have already said that this is due to human interference. And so it is, for nothing but the so famous Grand Canal is to blame. This sounds like a serious accusation, does it not? Well, I will explain how it happened. As the question is rather complicated, for the influence of the Canal on the various rivers differs

very considerably, I will go a little more into detail and will, so far as the time permits, deal with each river separately.

Before the Canal was constructed the Hai Ho served, as far as I can ascertain, only as outlet for the Pei Ho, the Hun Ho, and the Ta Ching Ho. But when the transportation of tribute rice to the capital became a question of such vital importance that it was considered necessary to make a waterway connecting Peking with the South, great changes were brought about. And as it was done without due appreciation of the importance of free and unhindered courses for the various rivers that had to be used, or, if this appreciation existed then, at any rate, without sufficient hydraulic knowledge to provide adequate means for offsetting any obstruction caused, the entire drainage system became upset.

The Canal was made as follows. So far as was possible river courses were followed. Thus, for example, the Canal from Tungchow to Tientsin is nothing but the Pei Ho. South of Tientsin the Canal was constructed by connecting the Pei Ho with the Fu Yang Ho and this again with the Wei Ho, following the course of the two last-named rivers as far as possible without deviating too much from the general southerly direction of the Canal. This of itself would not have done much harm, but instead of letting the Fu Yang Ho and the Wei Ho retain their outlets to the sea, the former was entirely diverted and connected with the Ta Ching Ho, by what is now called the Dze Ya Ho, while the Wei



Ho was forced to follow the Canal as far as Tientsin, so that from that moment the Hai Ho had to cope with the flood waters of all the rivers. Certainly a few outlets were made to deal with the freshets in the Wei Ho, but as the Canal was only constructed for the purpose of navigation and not with any consideration for drainage or other requirements, its dimensions were naturally far below the capacity necessary to deal with freshets effectively, so that generally the Canal banks had already burst before flood escapes could give sufficient relief.

Just look on the map and you will see at once in what an unfavorable position the country along the upper reaches of the Wei Ho was placed. Not only is there no other escape for the flood waters than the Hai Ho but the Canal itself is absolutely insufficient. In a way this is good, for if the Canal had a larger capacity, Tientsin would have been far worse off than it is now. Also the Fu Yang Ho and the Pu Ta Ho districts are in a very bad plight; they have not got a sufficient outlet either, for the Dze Ya Ho is only a small river; but even if it had been larger it would only have conveyed the water as far as Tientsin, and as it cannot escape quickly enough from there, that district would always have been inundated instead of the country farther away.

You see how the Chinese, with the knowledge of engineering which they possessed a thousand years ago, were forced to divert the entire Wei Ho into the Canal, because otherwise there would not have been enough

water available during the dry season, when the river brings very little. As the Canal was just given sufficient capacity to cope with the minimum discharge it is needless to say that the drainage of the country westward was sacrificed.

The construction of a canal at right angles to the general direction of the watercourses of a country is a very difficult problem and cannot be undertaken without the most disastrous results unless it is done with full understanding and appreciation of the difficulties that have to be faced, and at the same time with the engineering knowledge required to overcome them. This the Chinese had not, and even to-day they are not much further advanced, although now at least they begin to understand that such a thing as hydraulic engineering exists.

As I have already said, the so-called North Grand Canal, from Tungchow to Tientsin, is properly called the Pei Ho. When first used as a canal it was found that the river did not carry enough water in the dry season to render navigation possible, so that it was necessary to procure an additional supply. This was done simply by leading into the Pei Ho another river called the Chao Ho, now only known as one of the main tributaries of the Pei Ho, but as a matter of fact originally forming part of the catchment area of the Peitang Ho. The consequences of such a step, whereby the natural drainage system was suddenly thrown out of balance, could not but be very serious unless adequate

precautions had been taken; but this was not done. The Chinese have never known anything else but building dikes, and when a break takes place they content themselves by repairing it or by building a new dike farther away from the river, that is all. Every break, however, carries more consequences with it than the inundation of the country, because below the break the river will silt up and so in this case the condition grew gradually worse, causing renewed dikebreaks; and this happened more and more frequently. At last some flood-escapes were made, to deal more effectively with the freshets, but as they were all constructed with a high sill, which practically only allows the water nearest to the surface to escape, while the water near the bottom, which contains naturally more silt, was held back, most of the soil carried down by the freshets remained in the river, and was dropped somewhere below the overflow, so that although temporarily some relief was procured, the capacity of the river was not improved in the long run, but went instead from bad to worse. And not only did the river become more shallow, but it adopted also a more winding course. Apparently this was just the very thing that was desired, for when the river once made, during a strong freshet, a short cut one mile long, shortening the route by nine miles, it was restored to its original bed because the current was too strong for shipping. Even the Hai Ho, although it had to serve as outlet for all the rivers, was kept as small as possible in order to prevent the water escaping too quickly during

the dry season. So it had gone on for several centuries until at last, a few years ago, the river sought a new course by leaving the old bed at a place about forty li above Tungchow. The water follows now a tributary of the Peitang Ho. A part reaches the sea via that river, but the greater part spreads over the country and either evaporates or reaches some other outlet. An attempt has been made to bring the river back again to its old bed, but it was a useless attempt, for the old river had been ill-treated too long to be of any further use. The little water that is now flowing through the Pei Ho comes from a small watercourse that enters the main river near Tungchow. If it were not for that there would have been no water at all. Here you have all that is left of what at one time was the main drain of a catchment area of 9,000 square miles.

And now we come to the most notorious of all the rivers of this province; namely, the Hun Ho, or Yung Ting Ho, which is the official name and means "Everlasting Unchanging River."

Why is it that this river is worse than the others? In principle it does not differ at all, but the point is that on account of its size and the comparatively short distance from the hills to the sea, the amount of silt carried down and the force of the freshets are much more keenly felt than in the case of the other waterways. Moreover the course of the Hun Ho leads through a

rich district and passes close to the capital and the most important trade center of the North, so that the river enjoyed every one's attention, which led to much being done to avoid the nuisance of inundations and the effect of the silt which threatened the very existence of every waterway with which it came in contact. The other rivers bring down much soil and cause inundations just as well; the name Sha Ho, which one hears continually when visiting the various watercourses crossed by the Peking-Hankow Railway line, is a sure proof that much silt is carried down. But those rivers are too far away to receive much attention and have had no patrons who were influential enough to draw the attention of the higher officials to their shortcomings and thus have remained as they were and have continued their course unhindered. After all, this has been to their advantage, for the Hun Ho, which was very much interfered with but in an unskillful way, is now in such a bad condition that it is more dangerous than if it had been left alone or handled in a proper way. In destruction-bringing capacity the Hun Ho is now only surpassed by the Yellow River.

As I have already mentioned, the natural tendency of the rivers in this province is to raise the plain because they bring down more silt than the current along the lower courses is able to carry. This plain-raising can only take place, however, if the river is free to go where it likes, but as this is often not welcome to those whose

homes are affected it is only natural that man has tried to restrict the process to a certain area only and commenced to confine the river between dikes. But in the case of the Hun Ho man was not content with having restricted the plain-building to a certain strip of land but he went even so far as to prevent the river from continuing this process as far as its mouth, that is, as far as the sea, and this is where the fatal mistake was made, a mistake of which the bitter fruits are tasted yearly, but this last summer in particular.

In the upper reaches of the Hun Ho the gradient is steep and consequently the current is strong enough to keep all the material brought down from the hills in suspension, but as the slope becomes more gentle, gradually decreasing from 1:250 to 1:500 above the Peking-Hankow line to 1:4,000 and even 1:10,000 farther down, the velocity decreases also, with the result that a great part of the soil hitherto carried is dropped, the heavy material, like gravel and sand, first, the lighter silt afterwards. This naturally causes the river bed to rise, and this has already taken such proportions that the bed is at many places over twenty feet higher than the surrounding country. That under such conditions dikebreaks are far more likely to occur and are far more serious than if not so much silt had been deposited is evident. And yet this silting has been willfully accelerated by restricting the outlet; if this had not been interfered with, or better still had been improved,

the process of silting would have been retarded and dikebreaks would not have taken place so frequently nor have been so severe.

As it is now, the water which rushes down during freshets cannot escape quickly enough and consequently rises higher and higher until at last the floodwater, having to find an outlet somehow, does so by bursting the dikes, ruining millions' worth of crops and property.

Again the Grand Canal is the indirect cause of all the trouble, for in order to prevent the silt from entering this waterway, which in those times was considered of the most importance, the Hun Ho was not allowed to flow unhindered to the sea, as it has to pass the Canal, but was led to various lowlands then existing where the water was stored up and from which places it could only run off through a small outlet. In the course of time, however, all those places became filled in, so that as a last resource the dikes inclosing the river near its present junction with the Pei Ho were built about fifty li apart, thus forming a large reservoir covering about two hundred square miles. In this reservoir an enormous amount of water could be stored up without causing the water level to rise too much. At the same time it acted as a clearing basin in which a great part of the silt was deposited so that the water eventually entering the Grand Canal carried comparatively little silt. In this way it was possible to keep the Canal in good order at least for as long as the reservoir existed; but this could only be temporary. Now the entire area, once a storage basin,

has been transformed into a strip of very fertile land from twenty to thirty feet higher than the country around. What will happen now? Not only have the freshets no longer any room for expansion and are therefore more dangerous with regard to dikebreaks, but if on the contrary, the dikes should not break, something far worse will take place, for then the full force of the onrush of water will reach the delta and will make for itself an outlet large enough to carry the entire quantity farther down. And as this channel-forming involves the removing by scour of enormous quantities of soil the results will be most disastrous. For what will happen? The delta being much higher than the Pei Ho, the water coming from there will simply rush in; lower down, however, in the Pei Ho, the slope is much more gentle so that the current will slacken speed and the greater part of the soil removed from the delta will have to be dropped. This will cause such a rise of the river bed that the capacity of the Hai Ho will be considerably reduced and this reduction may even be so much that navigation will be seriously hampered, if not rendered entirely impossible.

So far, it has been possible to maintain in the river from Tientsin to the sea depth sufficient for navigation, but it should not be forgotten that this depth is only maintained by artificial means. The natural tendency is for rivers to establish a uniform gradient, that is to say, a gradient that, if the soil of the river bed were of the same character throughout, would have through the



whole of its course practically the same slope. In the case of the Hun Ho this uniform gradient-building has, in the interest of the Grand Canal, been artificially retarded and in the delta has practically been put backward: while the little gradient-building that has been done in the Hai Ho has been made of none effect by dredging. However, the process can never be permanently stopped, and wherever the slope of a river is too steep erosion will take place, while where the slope is too gentle, the silt taken away from elsewhere will be deposited, no matter what may be done to prevent this. This rule is invariable and will be enforced by nature as long as the ideal state, that is, a uniform gradient of the river from its source to its mouth, has not been realized. Thus the Hai Ho, since it is a continuation of the Yung Ting Ho, only slightly modified by the four other rivers, is bound to raise its bed at the natural rate as soon as the artificial means that have retarded the process cease to exist. This moment has arrived, for not only has the clearing basin that temporarily interrupted the making of a uniform gradient been transformed into an elevated plain, but it forms now a part of the slope of the river and is, as such, too high to be maintained or to allow the bed of the Hai Ho, which is in close proximity and something like thirty to forty feet lower, to remain at its present low elevation much longer. The ultimate result will be that the bed of the river along its course through the high plain will be lowered, and the bed of the river lower down, that is,

the Hai Ho, will be raised. It has been possible up to now, favored by fortunate circumstances, that is to say, fortunate for shipping, to cope with this evil by dredging, but it will become more difficult each year, and if the Hun Ho should break its way through the delta, which is bound to happen some time or other, for instance when the dikes hold out just long enough to make the freshet reach the delta with full force, then there will come down all of a sudden such a deluge of mud, that it would appear as if nature were trying to make up in one season for the arrest in the elevation of the river bed, during the many centuries in which man intervened. That this means the end of Tientsin as a port is evident. At the same time the rivers would have practically no outlet at all so that the country would be in a permanent state of inundation, Tientsin included.

Last year the Hun Ho did block the Hai Ho up and it is only thanks to the immense lake made by the flood waters of the Ta Ching Ho, Dze Ya Ho, and Wei Ho, which is still supplying the Hai Ho with clear water, that the river has been scoured out again to its former depth and even more. But at what a price! Appalling misery all over and a direct loss which is estimated at far over one hundred million dollars.

I mentioned just now that thanks to favorable circumstances it was possible to cope with the silt evil in the Hai Ho by dredging. Do you know in what those circumstances consist?—In inundations of the country along the Hun Ho causing a loss of about two

million dollars on an average per year. Owing to such inundations the Hai Ho receives comparatively little silt as the bulk has been left behind on the inundated fields.

The Chinese, foreseeing what would happen if the Hun Ho delta got filled up, tried to provide other means to deal with the freshets. To effect this, two flood escapes were made in the right bank of the Yung Ting Ho, one at Lu Kou Chiao, the other fifty li lower. If these overflows had conducted the water to an entirely separate outlet of the drainage area the solution would have been a very good one, but as the Ta Ching Ho, to which the weirs lead, empties also into the Hai Ho it is evident that, since this river is too small, the effect can only be partial. As it is, this solution is nothing more than relieving one district by endangering another. Where otherwise inundations would have only taken place in the country bordering the Hun Ho, they now take place in the Ta Ching Ho area as well. In a report which I made in 1915 dealing with the same question, I said, "It is possible that these flood escapes will give relief to the Yung Ting Ho without endangering the Ta Ching Ho as this river has two large reservoirs, the Paotingfu Lake and the Ta Ching Ho Lake, but if some day all the rivers which empty into those lakes should also be in flood, which is quite possible, this would result in a serious catastrophe." This last year has but too well proved this to be true.

However, as far as regards the object for which they were made, that is, to safeguard the interest of the Canal, these flood-escapes were well chosen, but again, as I said previously, without due regard to other interests.

The only river which is in a fairly good condition is the Ta Ching Ho, which is mainly due to two lakes, the Paotingfu Lake and the Ta Ching Ho Lake, which form a reservoir of considerable capacity, so that freshets are in the lower courses not much felt.

You have heard a short description of the five main rivers in this province, which I hope has been sufficiently clear to demonstrate that by improving or rather by procuring new outlets and by a rigid reafforestation these watercourses will no longer be a curse as they seem to be now, but a blessing, and that is what every river really should and will be if it is handled in the right way.

Where those outlets exactly will be can, of course, only be decided after a careful study. Probably the Yung Ting Ho and Pei Ho will have to debouch into the sea more to the north, the Dze Ho may be given its old outlet again near Chikow, whereas the Wei Ho will have to empty its waters into the sea farther southward.

It is a project which will undoubtedly cost a great deal of money; but if one considers the enormous advantage which such an improvement will bring, the initial outlay is only of secondary importance, and is insignificant when compared with the benefits that will be derived therefrom.

## CHAPTER XXI

### TRANSPORTATION

#### INTRODUCTION

This chapter begins with a selection from a magazine article which shows the view of the foreign business man upon the subject of railways in China. This view is based upon the fact that China's six thousand miles of railway are plainly inadequate and upon the further fact that railways, judging from the results of railway building in other countries, will bring about great and desirable changes in the economic condition of those parts of China where transportation facilities are lacking. The foreigner is so thoroughly convinced of the general desirability of railways that he has a feeling of wonder at the slow development of railways in China.

It has not been thought necessary to devote much space to this general aspect of the matter. The principle enunciated by Adam Smith that the division of labor is limited by the extent of the market is a sufficient statement. No one will question the fact that China's railway and transportation facilities are inadequate to an extreme degree. No one will question the fact that adequate transportation facilities will work an economic revolution in China. These truths the student is expected to understand.

There is something to be said on the other side, however. A careful study of railways in western countries and in China shows that the problem of providing them in China is by no means the simple task that it may be supposed. Dr. C. C. Wong is well qualified to point out the difficulties and dangers of railway development in China. He is thoroughly familiar with the subject and his opinions are worth careful attention. The student must read Dr. Wong without forgetting the general principle of the advantage of better transportation facilities. By so doing he will arrive at a better understanding of one of the great economic problems that his country faces.

#### 54. The Importance of Railways\*

*By W. F. Carey*

I arrived in Peking three years ago, and for four months attempted nothing except careful study of the railway situation and the business methods of the Chinese. Here I found what is always a marvel to the visiting American—a territory one-sixth larger than the United States with a population more than four times as great, having in operation less than 6,000 miles of railroad, as against more than 250,000 miles in this country, the topography and climatic conditions of both countries

\*From an article "Railroad and Canal Construction" in *Millard's Review* for March 29, 1919, by W. F. Carey. Reprinted by permission.

being surprisingly similar. I found in addition to the railway lines a somewhat primitive system of water transportation. All the rivers of China and many miles of canals were being navigated. For the most part transportation on the waterways was being carried on by junks of shallow draft, with a capacity of from three to sixty tons, because of the shallowness of the water in many localities—for the rivers were being utilized as nature made them and were without the improvement which would have permitted vessels of larger draft to reach the interior.

By those living along the transportation highways and waterways—inadequate though they were—considerable commerce with the outside world was carried on, but the vast population of China's interior lived practically within themselves. They had no means of bringing their agricultural products to the outside world, nor were they, to any extent, in communication with it. Whatever mineral wealth this great interior contained lay also comparatively undisturbed.

It was not difficult to realize, however, that these conditions could not long continue and that expansion of transportation facilities on a tremendous scale must take place in China in the near future. I found the Chinese Government very willing to discuss a possible extension of her lines and particularly anxious to establish business relations with America. . . .

When I was in China wheat was selling in the province of Szechwan around twelve cents a bushel,

when at the same time the market quotation at Shanghai was a dollar a bushel. If the people of Szechwan had a railroad to transport their supplies they could send this wheat to Shanghai or other ports at a cost probably not exceeding twenty-six cents a bushel. Therefore, as in other parts of interior China, the inhabitants of Szechwan produce very little for export, nor can they, under present conditions, ever become large importers.

Our line into this province will change the whole order of things in Szechwan. The people of that region will begin to do their share of the world's commerce. They will begin to export raw materials which they will have in abundance in excess of domestic requirements and will import manufactured goods and machinery with which to develop their immense natural resources.

## 55. Some Dangers of Railway Development in China\*

by C. C. Wong

During recent years we have been rejoicing over the prospect of soon having a network of railways in our country; for above all other things we need railways to develop our country and to unite our people. Indeed, since 1900, we have seen, with satisfaction, that our

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\*From an article "Some Dangers of Railway Development in China and How to Prepare Against Them" by Ching-Chun Wong, Councilor of the Ministry of Communications, in the *Chinese Social and Political Science Review*, December, 1916, and March, June, and September, 1917, Peking. Reprinted by permission.



people have suddenly changed from their anti-railway ideas. Meanwhile we cannot but point out that it is dangerous when public opinion changes so violently. A few years ago when it happened to be the fashion of the time to oppose railways, those who made the loudest noise against railways were praised as most patriotic. During late years the fashion seems to have changed and people have been going to the other extreme by saying everything good for railway extension and money borrowing. It is such unbalanced swinging of the pendulum of opinion that is dangerous.

We fear this violent change of opinion in favor of railway extension and money borrowing is a bad omen, because railways, like many other useful things, are far from being either an unmixed bliss or an entire evil. Like firearms, they can strengthen and protect a nation just as they can destroy it, all of which difference depends upon how they are used and in whose hands the safer end is held. Thus, when railways are well located, rightly financed, economically built, properly kept up, and efficiently operated, they help to develop the country, to augment its wealth and unite its people. On the other hand, the absence of these necessary conditions can render the railways equally effective in leading to the destruction of a nation. These are not only well-known facts of to-day, but constitute an invariable rule for the future; and the case of China cannot be expected to prove any exception. Therefore, while rejoicing over the prospect of seeing so many

railways linking up our country, we must call attention to the facts: (1) that the success or failure, financially and otherwise, of a number of these roads cannot be foretold; (2) that these new roads as planned would ultimately involve an additional expenditure of more than \$1,200,000,000 of borrowed money; (3) that an additional annual interest charge of some \$60,000,000 must be paid over and above redemption charges, operating, maintenance, and renewal expenses; (4) that not all our creditors are without ulterior motives; (5) that outside of what we can earn with the railways, we have not made other adequate preparations to meet this enormous annual obligation; (6) that railway earnings are always slow in forthcoming during the first few years of a railway's life; (7) that net railway earnings are often less than 5% of its capital outlay even if a long period is considered; and (8) that once failing to meet our obligations these railways, in the heart of our country, may either follow the example of the Chinese Eastern and the South Manchuria or fall into the hands of some sort of an international commission. *Unless we begin to make adequate preparations to insure the financial future,* these consequences may reasonably be expected to follow. These inevitable dangers and unavoidable responsibilities must be given due attention when our vision is dazzled by the bright prospects of the distant future. We, therefore, propose to remove all sentimentality and to examine into the question dispassionately by posting plain facts with clear.

reasoning, with the hope of preparing for all eventualities while there is still time.

#### RAILWAYS DO NOT PAY ESPECIALLY IN THE BEGINNING

In the first place we must call attention to the fact that as a rule railroads cannot earn enough to pay their operating and maintenance expenses and interest charges during the first few years of their existence and, consequently, other means must be provided for meeting these expenses in order to "nurse" the roads into earning undertakings. The nonproductive period, be it so called, of a railway varies anywhere between five and twenty or more years. When a railroad is built, it takes considerable time to attract enough of the existing traffic or to create new business to meet its expenses. Indeed, many railways are known to have been built with the express idea of losing money during the first ten or fifteen years in order to develop a place or create new traffic. To make the point more clear, we need only call attention to what is taking place with our own railways, which are in a way repeating the history of railways in other countries. The Peking-Mukden and the Peking-Hankow lines rank amongst the best located lines, commercially speaking, of the whole world, and yet it took them some years to attract the amount of traffic which they enjoy. The Tientsin-Pukow Railway is by no means a poorly located line from a commercial point of view, and it has been completed several years, yet it has been operated at a net loss of some \$3,000,000

every year. There are other lines whose operating results are equally disappointing. But in the face of the excellent showing of some of the roads, people forget the unsatisfactory results of all the other lines. The following table gives the amounts which the government has advanced to some of the railways whose balances show negative figures during the last five years.

## GOVERNMENT ADVANCES TO RAILWAYS

Name of Railway	1911	1912	1913	1914	1915	Totals
Tao-Ching	636,583	806,185	813,016	249,000	244,264	1,749,054
Cheng-Tai	—	734,812	1,290,126	—	117,976	2,142,914
Tsin-Pu	60,000	3,305,913	4,399,632	2,758,000	2,611,051	13,130,651
Pien-Lo	697,400	—	597,800	238,100	242,630	1,825,930
S'hai-Nanking	390,775	570,000	650,000	491,800	437,212	2,539,787
Kuang-Chiu	733,600	767,440	858,160	865,532	1,007,549	4,232,549
Chi-Chang	731,669	459,095	444,822	477,037	453,339	2,565,912
Sh. H. N.	—	97,800	60,000	301,000	444,384	912,685
Chang-Hsia	—	—	43,000	160,920	153,293	357,213
Chu-Fing	—	—	—	74,200	170,592	144,792
	8,250,033	6,239,745	8,656,502	5,660,639	5,332,290	29,649,967

To meet these deficits the government has to depend largely upon the fabulous profits of the Peking-Mukden and Peking-Hankow lines. Were it not for the prodigious earning capacity of these two lines, the railways would have been in a very unenviable position.

What is serious is the fact that the earning prospects of some of the future lines are more similar to those of the Tientsin-Pukow and the Shanghai-Nanking lines; while the cost of construction is likely to be more than either. Hence, it is likely that it will take the new lines several years after completion before they can earn enough to pay their capital and operating charges. At.

any rate, it is unsafe to depend too much upon their earning capacity by counting the chickens before they are hatched.

History has repeated itself everywhere. As a writer says,\* in the light of the railway history of the world, almost all new railways in countries not having a highly developed industrial life, have run at a loss for the first few years of their existence. In America these losses almost invariably have been borne by the governments of the various places through which they run. In Europe, where the railways have been "in private hands, the government has been required to make up these losses by means of subsidies, land grants, guarantees of interest, loans that never have been repaid, and in various other ways, and when the roads have been owned and operated by the government, these losses have taken the form of deficits."† "As a rule, the subsidies, land grants, guarantees of interest and loans, with which the governments have had to come to the aid of the corporations *have never been repaid*, in fact have been a dead loss to the governments, except for the indirect benefits accruing therefrom."‡ In order to appreciate properly this state of affairs, we, therefore, propose to examine briefly the financial history of railways in other countries in order to prepare against what may be expected in China.

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\* Vrooman, "American Railway Problems," 1910, p. 177.

† *Ibid.*

‡ *Ibid.*

The author gives the railway history of England, the United States, France, Austria-Hungary, Italy, Germany, Bavaria, Saxony, Switzerland, Belgium, Japan, Australia, India, Cape Colony, South Africa, and Canada. From these histories, he comes to conclusions that lead to the following.

#### THE CONTRAST AND THE LESSON

We have seen how numerous railways in America went through the receivers' hands, how private European railways have to be subsidized, and how many European countries which have State railways suffer serious and in some cases continued financial losses. A careful study of the history of these countries cannot but lead one to feel that few railways are fortunate enough to earn always a 5% return on their capital cost, especially during the first ten or fifteen years. This state of affairs compels us to call attention to the differences in the consequences between a state railway, especially in China, where money is borrowed from other states, and a private railway working mainly with share capital which is invested for dividends. In the case of the private railway when the company cannot gain any profit, the shareholders simply have to go on without receiving any dividend on their money paid in. When it becomes still worse and the company is unable to pay the interest on the debentures or bonds, then the bondholders simply assume the management of the railway by the appointment of receivers, etc.

By such a process some class of shareholders may lose, but so far as the line is concerned, it goes on nevertheless until it has become strong by both the increased traffic and the money swallowed by scaling down securities. The worst calamity such foreclosures may bring about only means the change of ownership or management from the shareholders to the bondholders. So far as the nation is concerned, little difference is made, in that what is lost by one group of citizens is gained by another group of citizens, and the sum total of the two still equals the total national wealth as before. But what would be the result in our case? Practically speaking we are not only building our lines entirely with borrowed money, but sometimes "money tainted with political ambiguities and international intrigues." We retain the control of our railways only and entirely by grace of paying the specified interest. When a financial or political crisis, a commercial depression or any other similar unfortunate and unforeseen incident comes (and there are many such accidents in the life of a railway) we have no margin to fall back upon, like the shares of a commercial company, in order to bridge over such a crisis. The only thing we might depend on to meet such obligations is our national revenue; but we must know that most of such sources are earmarked. Thus what a commercial or any other depression will be likely to bring about is such a financial embarrassment as to make it impossible for us to meet some, if not most, of the interest charges on our railways. And

such defaulting could only bring about consequences which would be most serious.

It may be added here that, *per se*, there is not much serious objection to foreign ownership of railway stocks and bonds. Under ordinary circumstances, foreign capital may be advantageously encouraged and railways may also be owned and operated by private foreign companies. What makes the matter a serious one for China is the fact that, because of unsatisfactory political conditions and international methods here, the foreign syndicates who own Chinese railway securities, in case of any default, will probably demand special rights and extraterritorial privileges which they would not ask for in a country better situated than China. It is, of course, an advantage in many ways to encourage foreign capital to come into a country for investment. The danger arises when there follows political interventions which may not be compatible with the nation's welfare.

What railways are to a nation is like what men are to a family, in that both have their nonproductive periods and both require time, nursing, and preparation in order to become productive. Broadly speaking, in the case of a family, every birth means an additional amount of wealth and happiness, under certain conditions and always provided the newcomer is well nursed and properly brought up to be a useful man, all of which requires time, money, and care. Otherwise he may, and often does, bring ruin to the family and misery upon himself. The same thing is true of a railway. If it is



properly built, economically financed, and efficiently managed, it generally brings prosperity, while otherwise it will result in disaster.

Following this analogy, we may say that when a family is well-to-do and has sufficient means for bringing up its children, then the more are born the better it is. But when a family is poor, the result will be quite different. Suppose a family is just strong enough to struggle along with two or three children. If, fortunately, one is born every seven years, then all the children will have the chance of becoming useful. For when the second is born, the first will be seven years old; when the third comes, the second is seven and the first is fourteen; and when the fourth comes the first will be twenty-one and hence under ordinary circumstances old enough not only to take care of himself, but to contribute toward the support of the family. In this way and by so spreading out the nonproductive periods of the children, this family will be able to support all without any serious difficulty, while each child will have the proper chance of doing himself justice by becoming useful. On the other hand, suppose the same family gives birth to the same four children, but one every year instead of one every seven years, what would be the result? Not only will the family be unable to give its children proper preparation, but even their health has to be endangered in order to effect economy. Should any sickness take place the situation would become desperate. Under such circumstances, the otherwise

happy family becomes miserable and bankrupt, while the otherwise useful children become either weaklings or outlaws. And all this difference is wrought by the unfortunate crowding up of the nonproductive periods of the children.

There is another way in which the analogy obtains. That is, the first-born ones may be so overworked in their youth as to break down or become invalids, whose defects in later years it may be exceedingly difficult to remedy.

So it is in the case of a nation with her railways. They are good if the nation is wealthy enough to tide over their nonproductive periods and their financial crises, thus nursing them, one may say, into paying undertakings. Or they are good if the nation builds them at such intervals and manages their finances in such a way that the earnings of the older roads may help pay the deficits of the new ones. Otherwise both old and new may collapse, the one being foreclosed on account of nonpayment of interest, the other disorganized and crippled by the false but forced economy of neglecting its maintenance and equipment.

Now in which case do we find ourselves? The Peking-Mukden and the Peking-Hankow lines are the two first filial sons of China; they have been instrumental, as it is shown heretofore, in keeping the other lines going during their nonproductive periods. But within a few years six or more lines are going to be built, such as the Lung-Hai, Hukwang, Chin-Yu,

Ning-Hsiang, Chu-Chin, etc., and it is a serious question whether these older roads can earn enough to bridge over the nonproductive periods of future roads, some of which will have heavy costs, while the prospects of traffic are less bright than were those of the older roads. Moreover, like the family, the Government may sometimes have been getting so much of the earnings from the older roads, and some of the railroads may be so physically taxed in the lack of improvement of the permanent way and renewals of equipment, that it may soon become a question as to whether or not some of the older roads, like the older boys, will break down at just about the time when the new ones begin to demand money for meeting interest charges.

Another point which needs emphasis is the general mistake which has often been made by both private and governmental railways in swelling up the profit for a few years by neglecting to provide for dissipated capital. A railway is such a vast business that a great proportion of its expenses are unnoticeable; the effects of these expenses are not soon felt, and actual payment of them may be postponed for a number of years. Take the life of a rail, for instance; it usually stands for about 300,000 to 500,000 trains, or from five to twenty years. Therefore, during the first fifteen years of a railway's life, the expense of renewing rails must be inconsiderable.\* Yet the expenses incurred, or the actual dissipation of the life of the rails during those years must be going on just the same, although unnoticeable. And it stands to reason

that as the years go on more renewals will be required until the point is reached where wholesale repairs and replacements will have to be made, to say nothing of the demand for additions and betterments. The same thing is true, only more so, of cars, wagons, locomotives, machinery, etc., which last a certain number of years, at the end of which time new funds must be found to replace them, should the practice of mistaking dissipated capital for profits be followed. Take a locomotive, for example. Generally speaking, a locomotive will last about twenty-five years, if properly repaired and maintained. If it costs \$60,000 to buy, then at the end of every year one twenty-fifth of the original cost, namely \$2,400, has been dissipated or consumed, just as the value of coal or water consumed by that locomotive has been consumed. But the trouble is that people do not see so clearly the consumption of that \$2,400 at the end of the year in the case of the locomotive as they do the consumption of coal and water, which disappear more obviously in the form of steam, smoke, ash, and energy. Nevertheless, the consumption has been as actual in one case as in the other. The only difference is that the dissipation of the locomotive resembles internal consumption, which kills gradually and imperceptibly while the dissipation of water and coal is like external disease which marks the progress of every damage that it inflicts. But the final results are the same. (The provision of funds against depreciation of locomotives and rolling stock in 1914 by the Government railways will improve matters materially.)

To-day some of the roads are already crying for rolling stock, yet no money is forthcoming for that purpose. What makes the situation worse is the fact that this state of affairs is accepted by many as a matter of course. Few men seem to know or care to know what will eventually take place. The Ministry of Finance seems to take no notice of railway deficits. The Government appears to think all is going to be well with the finances of railways anyway. But the apparently quiet present will soon lead to the dramatic end. For by taking the whole of our railway financial practice into consideration, we fear that just about the time when we have begun to pay the enormous sum of an additional \$60,000,000 annually as interest on the new roads, our old roads will also be demanding enormous sums of money for renewals and repairs; that is, the younger members of the family will be crying for milk while the older ones will be demanding doctors' attention. It is just such conditions that ruin a family and embarrass a nation.

Thus, without multiplying examples, of which there are many, we may conclude that, so far as railway earnings are concerned, deficits are by no means the exception, especially during the first ten or fifteen years of a line's life. We have shown that state railways are generally opened at a loss; that each railway has its nonproductive and critical periods, during which time money must be found from other sources to keep it from insolvency; that when our new lines reach their

nonproductive stages, our old lines may be just on the point of breaking down; that we have no means or preparation for meeting these inevitable expenses; that a financial collapse may come as the result of the present practice; and that such a collapse will bring in an international commission which will turn our otherwise beneficial railways into most effective means of foreign exploitation leading to our downfall.

Now what shall we do about it? To remain indifferent, waiting for the end from the beginning, or to stop and discourage railway building so as to avoid this dangerous financial collapse, that would be suicidal. For we must remember that *direct earnings* of railways are and *should always remain a secondary consideration* in comparison with the indirect benefits of development of the country and union of the people. We again emphasize that the important trunk lines should be pushed with the utmost rapidity at all costs and that it is the duty of every Chinese to lend his support to this undertaking. What we aim at is to call attention to what has taken place elsewhere and what is most likely to happen with us, to point out the terrific dangers of a possible collapse and to depict other underlying disasters, so that in pushing the construction of our new lines we may be on the lookout and *may soon begin preparations* in order to steer over these disastrous rocks into safe harbor. What we advocate is simply a steady conservative program of construction, instead of a hasty and hazy way of jerry-building, and a *due preparation for*

meeting our increasing and enormous financial obligations of our railways so as to insure their solvency during the approaching critical period, instead of any haphazard policy savoring of the idea of "patching up for to-day and leaving the devil to take care of what comes next." When we bear in mind what has taken place elsewhere and what it means to keep our railways from foreign exploitation, we cannot but feel that preparation is not only important but imperative.

In order to avoid the pending dangers, we propose the following seven steps:

1. To separate railways from politics.
2. To abolish likin along the railways.
3. Consolidation.
4. To complete the unfinished lines and to plan further construction in conformity with our financial ability.
5. To administer the railways as a business enterprise.
6. To encourage honesty.
7. To train up experts.

*To separate railways from politics.* First of all, the administration of railways should be entirely separated from politics. The experience of other nations has invariably shown that unless the administration of railways is properly safeguarded from the influence of politics, railways will increase the corruption in politics and politics in turn will corrupt the railways. Politicians are the worst kind of men that any nation can place in charge

of the administration of railways. Railway posts may be marketed as political prizes and railway rates and fares may be bartered for political selfishness. Political parties may exploit railways and railway finance for party ends. Unless and until we have properly safeguarded our railways from the evil influences of both politics and politicians, our railway administration will surely degenerate from bad to worse. Even such small positions as ticket clerks and porters may be bartered for political or partisan favors. Efficiency and discipline will disappear. Disorganization and corruption will grow. It may be added that in countries where republican institutions are encouraged, the administration of railways is more liable to suffer from the evil influences of politics than in autocratically governed states.

*To abolish likin along the railways.* Since likin only taxes the trader, one may question why we should advocate its abolition in connection with railway finance. The reason is that likin barriers bother the trader directly and hinder the railroad indirectly. Railways, we may say once for all, depend upon the trader. What hurts the trader immediately hurts the railroad eventually. Therefore, in order to insure the prosperity of the railroad, one must endeavor to remove the difficulties which lie in the way of the trader. Generally speaking, there is hardly any other institution that is retarding the development of railway traffic more seriously than the imposition of likin along the railways. The difficulty



does not lie so much in the amount which is collected as it does in the delay and damage, the cost of paying the taxes and other inconveniences which arise from these collections. Indeed, what it costs the trader to pay his taxes is often more than the taxes themselves. The reported corruption, extortion, and purposely committed damage to goods of the helpless traders, of which the likin collectors are guilty, are too notorious to need emphasis. When these facts are taken into account, it is really a credit to our traders that they can still survive.

But without going further into the question, we feel it safe to say that the abolition of such barriers will not only meet with the hearty approval of the honest trader, but will prove a boon to the commerce of the whole country as well. And it is by the development of our commerce that our railways may earn more money, thus preparing to meet the approaching financial difficulties which we have just pointed out. What is lost by the abolition of likin will be more than made up for by the increase of railway revenue. To make up the loss of funds of the Ministry of Finance resulting from this abolition, the Government can easily require the railways to credit the Ministry with a lump sum every year equal to the likin revenue derived from railway traffic, which the railways would, quite likely, be willing to do. By so doing the Government will have everything to gain and nothing to lose. So it is safe to say that this is one of the very few reforms that will bring benefit.

to all and harm to none. The only people who will suffer from this reform will be the likin runners, and it is very likely that they will raise great opposition.

The competition between our commerce and industry and those of other countries also demands the removal of the likin obstacles along the railways. In this regard we have to remark that not only the customs tariffs but also all State railways, and to a certain extent even private railways, in other countries, invariably make special efforts to help domestic industry. Germany, Belgium, Switzerland, France, Japan, etc., are some of the most obvious instances where customs and railway tariffs are well known to have been used to protect home industry, and their results are justifying their practice. But we have been following a diametrically different policy. Instead of helping our commerce and industry by showing them favors, we obstruct them in their uphill struggle against foreign competition and place them at a great disadvantage by subjecting them to the numerous inland impositions, while exempting the foreign competitors. For it is only imported goods that can be transhipped to any open port in the country upon paying a nominal *ad valorem* duty at the port of entry, while there is no way open to the home trader by which he may avail himself of similar immunities. This is not only harmful but unjust and absurd, and it alone is enough to prevent our trade and industry from catching up with those of our competitors, to say nothing of the numerous other serious disadvantages which our industry

has to face in its up-hill struggle. In so far as we are tied up from raising or adjusting our absurd customs tariffs we have no other way to help our home industries than to place them on a fair basis with foreign competition by removing the obstacles resulting from inland taxes.

We own this reform not only to the railways, but to our industries as well. The sooner this is done the better it will be. Some efforts have been made to effect some reform along this line in certain cases, but we feel it our duty to appeal to the Government to make this reform general and applicable to all cases. For the removal of likin barriers along railways will benefit the trader and increase railway revenue, both of which facts will prove advantageous to the nation.

*Consolidation.* The consolidation of railways has been found most efficacious both in reducing expenses and in increasing efficiency. Practically speaking, the railway history of all countries agrees in one respect; namely, in the beginning the lines are always short and have to undergo a period of consolidation or unification in order to become great transportation systems like those of America, England, France, and India, or a unified system like that of Prussia. In England there were several hundred railway companies in the beginning, and the railways of each company averaged only about fifteen miles in length. But twenty-five years later, when the railway length of the country had increased from five thousand to thirteen thousand miles, the

number of the companies, on the contrary, decreased to twelve, by consolidation; and these twelve large companies are continuing to amalgamate, especially in respect to traffic matters. In France, the number of independent systems was reduced from thirty-three in 1847 to eleven in 1852, and still further reduced to six in 1859. The railways in the United States give a still more vivid illustration of this fact. In spite of private ownership and Government interference, consolidation is very extensive. Thus most of the 250,000 odd miles of line in the country are controlled by some ten or twelve large trusts or operating companies. Most of the large companies operate more than 4,000 miles of line and some of them have twice that much. If we consider the length of track, these figures will have to be doubled. Every one of the large American trunk lines is made up of scores of former separate lines. In other words, all our Government railways put together are hardly enough to equal the lines of one company in America.

In all the countries where there is State ownership, invariably all the State railways are consolidated as a unified whole and placed under one central administration with as few district administrations as efficiency of operation permits. Prussia has some 56,000 kilometers of State line, which are operated by twenty-one district Directions, thus averaging about 2,700 kilometers for each district Direction. Moreover the business of one mile in Prussia is more than that of five miles in China.

Furthermore, in the control of rolling stock and other matters which concern all the railways, there is only one central office which does the work for the whole country. In fact all cars and wagons of the whole country are considered as common property of all the railways. They are placed under one central controller, with a number of district controllers, who distribute the rolling stock among the different lines or divisions according to their needs. The highest degree of economy in using and handling the wagons is obtained.

Turning to Switzerland, where nationalization dominates, the same thing obtains. The railways are managed by five divisional administrations with a central administration at Berne as the headquarters. The control of rolling stock and other affairs of a general nature, which concern all the divisional administrations, are placed in a central office.

Economic and national reasons make consolidation inevitable. From the point of view of economy, the advantages to the public in speed, accuracy, and good organization have been obvious everywhere. Take the matter of rolling stock, for instance; by consolidation it can be used to much greater advantage, and millions upon millions of dollars can be saved every year. The pooling of rolling stock in America and in some of the European countries like Germany, Switzerland, etc., is proving of unmistakable advantage. By this process, it is understood that the whole system of railways can get along with about three-fifths of the former quantity.

of rolling stock and do an equal amount of work, which means the saving of millions of dollars.

By consolidation the administrative and other general expenses can be reduced. It is obvious that it will cost less to maintain one head office and one set of general officers than to maintain a number of them. Moreover, to tranship frequently always involves extra trouble and expense. Even with interchange of rolling stock, there is still the trouble and cost of duplicate or multifarious accounting and checking which are indispensable when there are separate administrations.

By consolidation some companies were able to reduce their working expenses to about three-fifths of their former amount. In fact it is generally acknowledged that it is largely by such consolidations that the American and British railways have been able to pay so well as they have during the last two decades. Indeed, it should require no special training to see the advantage and necessity of such consolidation. If one turns to our own railways, we find that most of the so-called big lines have only about 600 miles of single track, while many of the other lines are not even long enough to form a separate operating section or district in other countries; and for each of these short lines we have to maintain a separate head office with all its directors, managers, and sometimes parasites, etc. This is one of the chief reasons why in America the general expenses of the big companies amount only to about 4% of the total operating expenses while those of our

railways average about 10%. The direct losses due to the payment of salaries and expenses are small when compared with the losses due to the lack of efficiency in management and waste in operation. Without going into any detail, it is safe to say that the number of our railway head offices could be reduced by half for economic purposes. Of course there are the difficulties resulting from the loan agreements, which make such a consolidation hard. But such difficulties should not prevent us from aiming in the right direction; and every little achieved is so much gained. Therefore, I wish to repeat that consolidation of administration is most important.

*To push the lines under construction with speed and to adopt a program for the future.* We believe in pushing the unfinished lines rapidly, because every delay, no matter what the cause, means so much waste of money. The engineers, etc., will have to be paid, the staff and establishments will have to be maintained whether or not construction is proceeding. Besides other losses we have also to make up for the loss of interest on the proceeds from the sale of our bonds. On every dollar of bond we sell we have to begin at once to pay at least 5% as interest, but such proceeds, when put in the foreign banks pending the time to be spent in construction, only bring to us a return as current deposit of about 2 or 3%; thus we lose 2 or 3% outright. Take the Hukuang lines as an example; we are losing every day some \$4,000 because of the delay.

If the construction is delayed one year it means that we would lose about \$1,500,000; if delayed ten years, \$15,000,000 will disappear.

In this connection we may add that we should not begin the engagement of any directors, engineers, etc., until our bonds are sold. Otherwise, we shall have to support these employees and their establishments with money out of the "advances" made by the loan agents, even though they are doing nothing pending the flotation of the loan. In some cases we may lose hundreds of thousands of dollars by waiting and may find ourselves in a very embarrassing position when the "advances" promised by the banks are exhausted and the European market is too dull to permit the flotation of our bonds. Under such circumstances, we will find ourselves at a great disadvantage with the loan syndicates in our negotiations.

For the foregoing and other reasons, we urge that a general survey of the important trunk lines be first made by experienced engineers and a careful program for the concessioning and construction of future railways be worked out so as to separate the non-productive periods of the various lines and to push the more remunerative lines first, in conformity with our financial capability. Unless such a careful program is followed and proper preparations made for meeting our increased obligations and multiplying expenditures, all our present buoyant hopes of direct gains and indirect benefits will prove dangerous illusions, the fear of an



international commission will become a reality, and this otherwise beneficial railway expansion will become the cause of our dissolution. This is our situation and to meet it constitutes our task.

*To administer the railways as a business enterprise.* To avoid the disaster of any approaching railway collapse, administration of the railways according to business principles is essential. Other railway nations not only have been taught by experience to treat railways as a commercial enterprise and to separate railway finance from other finances, but many have also seen fit to set aside a part of the Government's revenue from ordinary sources as capital and reserve for the construction, safeguarding, and upkeep of their railways. As direct earnings from railways are often insufficient to meet their expenses and interest charges, this precaution has proved not only advantageous but in many cases necessary.

Now railways are not native products of China, but an imported institution. The experience of other nations must obtain in our case. Consequently, in introducing railways, we may as well adopt such safeguards as have been found necessary elsewhere, by setting aside a certain adequate part of the Government revenue to meet railway deficits. In so far as all such revenue of the Government is earmarked and hence cannot be in reality set aside to meet railway demands, the only thing left is to let the railways take care of themselves by permitting them to pool their interests, so

to speak, so that what one line loses may be made up by the gains of another; and part of the surplus of good years may be reserved for the payment of the deficit of the bad years. Thus the railways may effect a sort of mutual insurance against each other's losses and nonproductive periods, as we have illustrated in the case of the family. Failing to face this necessity by continuing to take the last cent away from the lines that pay and to neglect the needs of those which do not, or by taking away all the profits of the good years and to ignore the losses of the bad years, this would be a suicidal policy.

Many lines operated by private companies have been "milked," to use the exact word, for temporary purposes at the expense of the prosperity of the lines. The same thing may be done with governmental lines at the expense of the nation. By this process of milking, railway "profit" may be swelled for a number of years by misappropriating railway capital. For instance, the Government or shareholders may reduce operating expenses to a minimum and regard all that is left as profit which they immediately take away from the railway. So far as railway business is concerned, the maintenance and other expenses may be reduced far beyond what is proper during a number of years without apparent serious results. Necessary improvements may also be neglected. In the meantime, capital investment may be taken away as profit, as we have illustrated elsewhere in the case of locomotives, rails, rolling stock, etc. Such practices are most dangerous.

To avoid this disaster, it is urged that railway finance should be planned out for a long period and properly balanced, so that railway earnings can be devoted first to the meeting of both present and future railway demands. Provisions should also be made to meet all deficits.

This may, indeed, be a very distasteful reform to make at this point when the nation's finances are in such a stringent state. But it is indispensable if we want to safeguard the future and to bring about efficiency in railway administration. Like a surgical operation, it hurts while taking place but is the only means of improvement. A few months ago, when the country was disturbed by a revolution, we would not have advocated this measure for fear that such a suggestion might be taken advantage of by irresponsible parties to embarrass the Government. In fact, this paper was prepared in 1912 and was amplified in September, 1913, when the writer was investigating the administration of the Swiss railways; but on account of the second revolution, White Wolf, etc., it has been kept until now when constructive work must soon begin. As it is time to consolidate, and plans for the long run must be made, this reform is urgent.

By this separation, it is not meant that railway receipts should be hoarded up while the Government goes borrowing, but rather that the needs of the railroads should receive due consideration and that a "living" allowance be granted to prevent them from bankruptcy

or from being handicapped by the lack of equipment in handling their business. Surpluses can be turned over to the Government through proper channels. That is, the Government should recognize more clearly the railways as a separate business and its own position as that of a shareholder. The business should be managed on a business basis and should be permitted to plan as to how to meet its needs and to carry out its improvements by using its own resources, while the Government should take dividends only after such needs have been properly met.

What has hurt the railway credit most during recent years is the fact that the central administration has not been placed in a position to survey the whole situation and make due preparations beforehand, as a result of which spasmodic or "frenzied" financing had to be resorted to in the form of short-term loans at greatly sacrificing rates of interest or discount. Railway finance is a science. Special attention should be paid to this branch of railway administration, the success of which should begin with the complete discarding of juggling and the adoption of a definite policy with an absolutely pure and honest administration.

It is accepted as a general rule that sound finance must be preceded by clear records and proper accounting, where each item of revenue and expense is properly accounted for. Unless the Government is bold enough to face the situation squarely, to put all financial matters aboveboard, to introduce proper accounting, and to subject

every item of revenue and expense to an impartial control and effective audit, not only will our railways run into collapse, but our nation will go into bankruptcy. It is up to the Government to get its most reliable and properly qualified men and give them enough power to control all revenues and expenses so that a proper survey of the financial situation may be made, that every dollar will figure in the books and that every figure will represent true facts. If the officers lower down should be subjected to proper control, the officers higher up must be prepared to honor such control first. This applies not only to railways but to other branches of administration as well.

*To encourage honesty.* The last, but by no means the least important step, which we propose, is to adopt a system that will encourage honesty and improve the efficiency of the railway service. And that system is to admit new employees by effective and impartial examination, to insure permanency, and to award promotions on the merit of service.

Squeezing and other forms of corruption among railway men have often been reported in China. We are not in a position to say how much truth there is in these reports; but we are certain that in the absence of fire there could hardly be so much smoke. What we propose now is to stop squeezing among railway men; and we believe we can do it.

In order to stop squeezing among railway men, we must, first of all, find out what are the real causes of

that evil practice. I may state from the outset that squeezing and corruption in general among our railway men are by no means due to the lack of honesty or business capacity of our people. Indeed, after staying in Europe and America nine years and having made much special study of the underlying causes of squeezing at home and elsewhere, I am convinced that our people, on the whole, compare favorably with other peoples, so far as honesty and capacity for business are concerned. What is wrong at the bottom of it all seems to be partly our lack of experience with the new order of things, but largely our lack of a proper system of encouraging honesty and efficiency. Given an efficient system and a reasonable amount of time to become adapted in the administration of railways or any other business, our people, I firmly believe, will be just as honest and efficient as any other people in the world. There is some hope they may be better.

Our lack of a system of encouraging honesty, although often overlooked by ourselves, has been most glaring in the eyes of others. In the first place, after these long years we have not yet evolved any system for the selection of young men for the railway service. We have not yet opened the door of our railway service to all competitors. Consequently the posts in the railways, such as those of clerks, guards, conductors, station masters, inspectors, etc., may often be filled by irregular means, chief among which is "pull." As a result men of little education or ability, or even men of doubtful

character, have often entered into the service and held responsible positions. With such men to begin with good results can hardly be expected.

The evils of the "pull" system are too numerous to enumerate. In so far as one can get into the service through the pull of his "protectors" or his party, he can easily manage to stay in and practice corruption in defiance of his superiors, for he knows that so long as his protectors remain in power, their overshadowing influence will be enough to protect him from punishment for his rascality. Not only is he unfit for the work, but he also rejects discipline. He is perfectly conscious that the tenure of his post depends upon the influence of his protectors. When the latter are in power he feels safe no matter what happens; when that power weakens off he goes also. There have been many cases of men being suddenly appointed to fill important positions and being dismissed equally summarily, for no other reason than the rise or fall of their relatives or friends. Such men can seldom be expected to render efficient service. Even if their immediate superiors should wish to enforce discipline they would often be prevented from so doing by the fear of the protectors' revenge, and the intrigues of those who would be only too ready to make use of such occasions to put themselves on good terms with such influential men. We cannot blame these immediate superiors, for we have no definite protection for those who wish to do right at the risk of offending their superiors. It is reported that in

the past some station masters absconded with large sums of money without punishment. Should we look into the records of these men, we could be sure that they were "recommended into" the railway service by men higher up.

In short, this lack of system for the selection of proper men for the railway service encourages the filling of posts by a series of favoritisms. The high officials, political parties, Members of Parliament, and other influential men would incline to appoint their protégés as directors, managers, and other important functionairs; these in turn would tend to appoint their relatives and friends to secondary posts, such as assistants, inspectors, station masters, etc., and so on down the list. As a result, it might happen that the important posts of a line would be filled mostly by men of a certain type or a certain locality, irrespective of their ability or character. It is easy to see the serious disadvantages which are bound to result from such a practice, especially in the matter of inspection, control, and development, to say nothing of the injustice done to the men of other types or localities.\* What is worse is that the absence of any adequate system might even lead to the sale of offices or to other forms of corruption.

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\*President Hadley of Yale University said that one of the causes of the failure of the Italian railways was that each line was officered by men from one locality, which practice tended to limit the power of judgment in the development of business.



Another cause of squeeze is the lack of certainty of service. The uncertainty of office in China has almost become proverbial. From the moment one enters the service, he never knows when he will be removed. This is true not only in the case of any one class of offices, but in that of all classes. Moreover, when one is discharged, there is little chance for him to get his case properly heard by any competent and impartial authority.

Take some of the railway directors, for instance; there have been many cases where they were not permitted to stay long enough even to learn their business. How, then, could fundamental reforms be expected? This can well be illustrated by the case of the Peking-Mukden, where we find that the average term of office of the directors is but a little over ten months. The Tientsin-Pukow Railway has been open but a few years and it is said that it has had more than a dozen different directors. Under such circumstances no man can expect to make any progress. For reforms in railway management take time to decide and plan, to say nothing of carrying them out. Without sufficient time, no sane man would venture to try to make any fundamental improvement; for in making improvements what is seen first is usually trouble, opposition, and even disturbance, while good results may not follow until years later. Furthermore the directors, besides being uncertain about their terms of office, are sometimes equally ill informed as to what are their duties. The

division of responsibility and power is often so uncertain that some of these directors would devote most of their time and attention to quarreling and scheming against each other, while others would simply draw their pay and do no work. The degenerating effect of such a state of affairs must be obvious.

Under such circumstances the director, who is the head of the railway, and has to deal with foreigners, can never know as much as the foreigners whose posts are permanent. As he knows less than the foreigners it is but natural that he cannot command the respect of the foreign employees, much less use them properly. Moreover, when the permanent foreign employees, besides knowing all the details and history of the work, see that the directors are tossed about by their superiors they gradually, sometimes, perhaps, unwillingly, become insubordinate. A number of able foreign employees had to be discharged on account of some such trouble; but the fault may have lain just as much in the way in which the foreign employees were gradually led to become insubordinate as in the employees themselves. Unless this state of affairs is improved no man can expect to produce lasting good results. It is too long a story to tell in this paper, but suffice it to say that *so long as we allow the important offices of railways to be made political rewards to be filled by favoritism or partisanship, so long we shall not have any directors and managers who can do the business properly.* What Mr. Dalrymple, the manager of the Glasgow Tramways, said

in regard to the Chicago railways is equally true in our case. That is, it is hopeless to think of operating the railroads efficiently so long as the officers are appointed for short terms from political motives.

In regard to the other classes of employees, it is a well-known fact that not many young men enter the railway service with the idea of remaining for any length of time. It is the lack of certainty, more than anything else, that prevents the railway employees from looking upon their service as a lifelong career, and it is this attitude of the employees that tends to promote squeezing.

Then there is the lack of any system for the promotion of the men lower down. Here again "pull" often works greater wonders than merit. This fact tends to influence the men to feel that it makes little difference whether they do their work well or not. The fact that they see with their own eyes that some of their comrades sometimes actually get rich quickly with impunity, and that still others can get quicker promotion through "pull" than through merit,—all these facts must prove demoralizing.

It is these lacks in the system of railway service that lead to most of the evil practices hereabouts. *Given a strict system of examination for selecting duly qualified young men to begin with, and a carefully defined career of service together with a properly organized system of rewards and punishments, the railways will be able to get the best type of young men of the country to flock to their*

*doors.* With such duly qualified men to start with, and a regular career planned out honesty and efficiency will come with time. For it must have been noticed by many observers that the average Chinese capitalizes certainty of service and a sure future more highly, perhaps, than most other peoples. Take a station master, for example; if he has to pass a hard competitive examination and several years' service to get his position, he will naturally value that position very highly. When we add to this the feeling that so long as he discharges his duties honestly and diligently he is sure of his job, with a pay that enables him to live comfortably, and a reasonable amount of hope for promotion, the average young men are not going to risk such realities by courting any temporary gains which, at any moment, may not only deprive him of his safe income and position but also bring about criminal punishment. The results in the customs and postal services are examples of how the average Chinese young men attach more value to certainty than to other gains. It is repeatedly heard that men in those services take a much smaller salary rather than go elsewhere for a bigger salary, simply because they know they are safe in the service so long as they do their work well. Similar reports are often heard regarding the attitude of men in other lines of work.

The railway service can be made even more attractive, for it is a most interesting service which pays well for the amount of knowledge that is required and

the amount of work to be done. Indeed, it can be made into the most attractive service in the country, to which the best talent will flock. With some impartial system of examination to bar out unqualified men and an effective system of service and reward, we can eliminate squeezing from the railway service or at least reduce it to a minimum.

My emphasis of the importance of stopping squeeze will perhaps meet with criticism from many sources. On several occasions I have heard very enlightened men make slighting remarks of the efforts exerted for stopping squeezing. According to them, the important question is not to waste any energy in stopping squeeze but to devote every effort to the increase of earnings, so that squeeze will be more than neutralized. It is claimed that so long as a railway gets plenty of traffic and earning through the employees whether or not some small amounts of money are squeezed by the employees makes no difference. At first there seems to be considerable practical sense in this view; but after several years of observation, I have concluded that I must take a totally different view of the matter. In the first place, what we advocate is not merely passive, but side by side with that measure the active result of increased earnings will take place. Moreover, we claim that a railway cannot get the largest earnings by countenancing squeeze. On the contrary, experience shows that the best results can only be obtained through an honest service. Human nature is such that when a

man practices corruption, he is bound to devote his best time, his best efforts, as well as his best brains to perfecting his private schemes and to attend to his legitimate duties afterwards. Hence it is out of the question to get the best results from him, to say nothing of the demoralizing effect which he produces all around.

It may be further pointed out that what the railway suffers is far worse than the amount of money which such men may squeeze. Indeed, what is squeezed by the employees constitutes only a small fraction of what the railway loses. For example, if a guard gets one dollar from a passenger, that passenger's fare is likely to be three or four times that much. In the case of goods the proportion will be still greater. And what harm is done to shippers and passengers! It is heard that merchants often find themselves entirely helpless in the hands of station agents. Unless the hands of these agents are properly greased, all sorts of troubles may arise. Cars may not be promptly switched, wagons may be sidetracked, movement of goods may be delayed, goods may be spoiled, pilfered, or even burned on the way. So the merchants are constantly overawed and are threatened in order to make them pay squeezes, in order not only to avoid such calamities, but to have goods shipped at reduced rates and underweight. It is these underhanded evils, also, that call for the wiping out of squeeze.

*To train up experts.* The steps which we have just outlined will not only stop squeezing, important as that

is, but will also help to train up experts. It will have the positive effect of improving the whole railway service.

Experience has shown everywhere that railways must be managed by experts. The problems of railway administration are so numerous, the effects so far-reaching, the organization and working so complex, that it is only experts that are able to develop the railways properly. It may be generally said that one of the greatest needs of the railways in China is expert service. A few facts may help to show the needs.

We all know that in dealing with foreigners, we have lost in many cases in the matter of railways. This perhaps was due not so much to the aggression of our foreign friends as it was to the fact that they were experts while we were not. They knew what they were talking about, but we, sometimes, did not. When our laymen representatives, who had no intimate knowledge, met the foreign experts who knew every corner of the question, it might have been expected that our men should lose out.

It is due to the same lack of experts in China that we have to employ many foreigners in our railway service at a great cost. The fact that we have had considerable trouble in dealing with some of our foreign employees may be traced to the same cause. To ameliorate the situation we must first of all train up our own experts. Otherwise, any attempt to relieve our foreign assistants will be suicidal. In fact, we need more real foreign experts selected by ourselves for special work,

who would be willing to work disinterestedly for the country and ready to afford our young men every opportunity to learn. By this process, in a few years, we shall have our own experts. But the fundamental requirement for training up our own experts under our foreign employees or under any other system is that there must first of all be adopted an impartial and effective system for selecting the young men to begin with, a fair protection against the influence of the politicians and cliques, and a stable and well-defined service that will permit men to work long enough to learn the business.

In conclusion, it may be added that there has been a wrong conception of railway finance in China. Both the Government and the public seem to think that railways are gold mines, built for making enormous profits. What is more dangerous is the feeling or belief that every line, no matter where it is located and how it is constructed or managed, will yield enormous surpluses. They have seen the fabulous earnings of the Peking-Mukden and Peking-Hankow lines. Therefore, they think all other lines will do likewise. Apparently the Government thinks that the railways are not only going to pay all the expenses and interest on bonds as well as the annual quota on the redemption of the principal of the loans, but over and above these—the payment of which is clearly beyond the earning power of the railways—large amounts of money are to be taken out from them as net surpluses every year. What is worse



is the reported inclination of political parties and high officials to exploit the railways for party or private ends. To say that this is fraught with danger is to put it mildly. It is hoped that the foregoing pages may at least create enough interest in the administration and finances of railways to secure due attention for the whole railway question before it is too late.

## CHAPTER XXII

### PROPOSALS FOR REFORM

#### INTRODUCTION

This chapter does not present a complete and inclusive view of proposals for economic reform. Many things have been left out purposely and others of importance are to be found in earlier chapters. The subjects dealt with in Chapter II must be considered in connection with any proposals for reform, for that chapter has to do with the ethical background of the economic system in China. The subjects dealt with in Chapters XIV and XIX are also of fundamental importance. China is an agricultural country and any far-reaching reform must include proposals for dealing with the questions of the ownership, the tenure, and the taxation of land. There is, in fact, no subject in the whole field of economics that cannot be made the basis of proposals for desirable reforms. In this chapter, however, proposals of a general nature are presented, such proposals as involve a considerable change in the present organization of the economic life of the nation and its people.

It must be repeated that this chapter does not present a complete statement of proposals for economic reform in China. No attention is paid to the social and

economic ideas of the great teachers of the past. There are no readings devoted to the proposals of those who accept the ethical principles of these great teachers of the past and attempt to apply them to the social problems of the present day. These are serious omissions but the reasons for them are plain. In the first place very little has been written in the English language on this subject. There is, of course, the statement of Confucianism in terms of modern economics by Dr. Chen Huan-chang in his "Economic Principles of Confucius and His School"\* and there are a few statements by others, but in general it is true that the Confucianists have expressed themselves and do express themselves in terms of family ethics and of political ethics rather than in terms of economics. Another reason for these omissions is that the student who has been aroused to thought by the problems that have been presented in the earlier chapters of this book will make efforts to find out for himself what the teachings of the great men of his own country are upon these subjects. The ideal commonwealth or the ideal society as it is presented by the great men of the past, social and economic reform as it is viewed by the Chinese scholar of to-day—these are topics which may well be discussed in the classroom or dealt with in writing by the student.

The selection in this chapter begins with a statement by a leader of liberal thought in China to-day of his

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\*New York; Columbia University; 1911.

conviction that vigorous criticism must be brought to bear upon the traditional ethical system of China and a further statement of the problems that most need attention from the point of view of liberal and critical analysis.

The second selection is a statement by Professor Carver in which he makes proposals for economic reform that rest upon a critical analysis of Western society.

The third reading is a statement by a group of Christians in China prepared for the National Christian Conference held in Shanghai in 1922. What is given is the introduction to a full and concrete statement and this introduction has been selected because it states the fundamental principles that are applied in the fuller statement.

This is followed by two readings on socialism in China and by a last reading in which certain documents of importance to the understanding of Russian communism are presented.

The student is urged not to leave this chapter until he has tried to state his own convictions upon the subject of social justice, his own opinions as to the chief reforms needed in Chinese society and in the economic system of China, and his own hope for the future. It is by coming to his own thoughtful convictions, and by this means only, that the student can arm himself against the fads of the moment and the equally dangerous prejudices of the moment.

## Intellectual China in 1919\*

*By Hu Suh*

Space does not permit me to enumerate the specific details of the recent intellectual changes in China. Nor is it possible for us now to pass hasty judgments on their merits and demerits. What we can do at best is to give in bold outlines the main tendencies which are clear and unmistakable to any careful observer of the newer movements. As I see it, there are three such tendencies: first, a movement toward democracy; second, a movement for educational reform; and, lastly, a change in the general intellectual attitude.

In the first place, there has been a better understanding of the meaning of democracy. Eight years of bitter failure under a nominal republic has gradually brought young China to the realization that democracy cannot be secured through political changes alone; and that no democratic government can ever be founded upon a citizenry brought up in the atmosphere of a semipatriarchal family system, imbued with antiquated ideas and ideals, and working in a social arrangement, where the individual, even the male individual, receives no proper recognition as such. Democracy, in short, is no more and no less than the sum-total of all the democratized and democratizing forces, social economic,

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\*From an article of the same title, by Hu Suh, in the *Chinese Social and Political Science Review*, Vol. V, December, 1919: Peking. Reprinted by permission.

moral, and intellectual. It is this realization which constitutes one of the guiding principles of the new movements in China.

Ever since 1898, the attention of intellectual China has been confined to things political. Its protagonists worked for the overthrow of the Manchu dynasty, and it was overthrown; they wanted a republic, and the Chinese Republic was proclaimed to the world; they wanted representative government, and they have had parliaments and provincial assemblies; they tried political parties, and parties they have had, even to the present day. They had staked all their hopes on the political at the expense of neglecting the nonpolitical. They were bound to be disappointed, and great indeed was the disappointment.

Then the events of 1919 gave us a new lesson. It was the nonpolitical forces—the students, the merchants, the demonstrations and street orations, and the boycott—that did the work and triumphed. This was a great revelation and produced a new optimism. As despair naturally results from one's coming up against some closed and blocked way of action, so hope and courage are engendered with the opening up of new and fresh channels of fruitful activities. Young China now finds enough to do. Let alone the Anfu Club; let alone the internal peace conference at Shanghai; let alone the petty political intrigues in Peking and elsewhere,—we still have the masses to educate, the women to emancipate, the schools to reform, the home industries to

develop, the family system to reshape, the dead and antiquated ideas to combat, the false and harmful idols to dethrone, the many, many, social and economic wrongs to redress. It is in these new channels of activity that young China, with reawakened hope and vigor, is now working slowly but steadily to rebuild a new foundation for Chinese democracy.

In the second place, the new movement has brought about a new beginning in educational reform. The theoretical interest in this educational movement has been inspired chiefly by the visit of Professor John Dewey. Dr. Dewey landed on Chinese soil four days before the memorable Fourth of May, and has since lectured in Shanghai, Hangchow, Nanking, Peking, Tientsin, Mukden, Shansi, and Shantung. Several "Dewey Numbers" have been published by the newer magazines to introduce his philosophy to the Chinese public, and his Peking lectures have been reproduced everywhere throughout the country. His emphasis on the child's natural powers, on self-activity, and on the social aim of education have set many a Chinese educator to serious thinking and surely will effect significant changes in the years to come. His advocacy of the experimental method in education has shattered our belief in a rigid and uniform educational system, and challenges us to carry on innovations and experiments without which an educational system is lifeless.

The practical side of this new educational movement has come from the events of the year. The student

movement with its organized efforts, its popular lectures, its interference with "cheap" goods, and its struggle with the constituted authorities, was itself a new education. The organization of students' unions was still more significant. They are organizations of young men and women, not for athletic or gladiatorial exhibitions, but for a serious and noble purpose. There can be no doubt that the associated life and organized activities of these unions will go very far toward training leadership and coöperation.

The necessity of popular support in a great movement like this made it imperative to educate the masses. Hence the various popular lecture forums, night and half-day schools, and industrial schools for poor boys and girls. The educative value of such activities cannot be overestimated. The sudden appearance of a large number of local periodicals, too, forms an important part in this movement for popular education. For the first time in history, the small communities which had long been accustomed to take their intellectual supplies from the metropolitan centers, have now begun to provide themselves with organs of public opinion and useful intelligence. When the first volleys of sentimental fire are over, they will have to settle down to business, to investigate into the conditions of their own localities and to solve the problems concerning their own civic interest and welfare. This, too, is an education of no mean worth.



In the third place, there has been a great change in the general mental attitude. It has been justly said that the greatest obstacle to progress in China is the deductive habit of mind; that is, the willingness to accept things on authority, to acquiesce in ideas and ideals without questioning whence they are derived and whether they are true or not. A quotation from the classics is sufficient argument for a national policy, and a spurious saying of Confucius is good enough to justify the existence of any obsolete custom or tradition. This habit is the most formidable enemy to innovation and progress. Its best antidote is found in the scientific attitude which seeks to find out truth for one's self and refuses to believe in anything without sufficient evidence of its credibility. It seems that this scientific spirit is beginning to make itself felt in the Chinese intellectual world to-day. It first shows itself in the attitude of doubt. The question "Why?" is heard everywhere. Why should we believe in this or that idea? Why should this or that institution still exist to-day?

Doubt rarely is purely negative. It leads to inquiries which in most cases lead in turn to positive reconstructions. We find, for example, many Confucian doctrines severely criticized, but we also find that Confucianism was never so intelligently studied as it is to-day. We find filial piety seriously questioned, but we again find that the relation between parents and children has never before been so rationally discussed as it is now.

This critical attitude cuts through almost every phase of Chinese life. Nietzsche has said that the modern age is an age of transvaluation of all values. Truly we are to-day transvaluing all our values, literary, social, intellectual, and moral. A glance at the numerous problems raised during the last two years,—problems of Confucianism, the Chinese language and literature, the position of women, the double standard of sexual morality, the reform of the theater, the right of women to inheritance and heirship, the reform of the schools, and so forth,—a glance at these will reveal the extent of this process of transvaluation. The new intellectual movement originated in concrete problems and its success so far has mainly consisted in having forced public attention to face problems where none had been suspected to exist. We have not been able to solve all the problems raised; but the mere unearthing of a problem and the discussions subsequent thereto are important steps pointing to its solution.

The spirit of doubt and criticism does not spring up of itself. It is always the outcome of a new vision and a new point of view. There must be sufficient data for comparison and reflection before the mind is freed from the shackles of the old standpoint which had long been taken for granted. Men who have acquired new standpoints either directly or indirectly from the West, have been applying them to Chinese ideas and institutions. Such comparisons, if honestly made, rarely fail to arouse doubts. Thus one by one have arisen the various

problems which have featured in hundreds of the new periodicals. And if we keep this in mind, we shall be in a better position to understand the motives behind the apparent eager though desultory reproduction of the new and radical thought-currents of contemporary Europe and America. The Dewey Numbers, the Ibsen Number, the New Thought Number; the series of studies on direct government in the *Construction* (建設), those on the different phases of socialism in the *Emancipation and Reconstruction* (解放與改造), and those on divers types of radical thought in *La Jeunesse*, the *Renaissance*, and other periodicals:—all this has been done not merely to keep pace with the fashion of the world, but largely to furnish the nation with sufficient material for comparison and suggestion in dealing with our own problems.

This new mental attitude, this willingness to look facts in the face and this boldness to raise unpleasant and unwelcome questions,—this I consider the greatest contribution of the new movements, the spread of which constitutes one of the most significant events of the last year. Progress and reform have never come *en bloc*, but always piecemeal. It is the solution of specific problems, and the transformation of specific ideas and institutions that constitute progress. And it is the critical and problem-loving habit of mind which is the only road leading to this piecemeal progress,—the only progress possible.

## 57. A Liberalist's Program for the Complete Abolition of Poverty\*

*By. T. N. Carver*

### I. LEGISLATIVE PROGRAM

- A. For the redistribution of unearned wealth.
  - 1. By increased taxation of land values.
  - 2. By a graduated inheritance tax.
  - 3. By control of monopoly prices.
- B. For the redistribution of human talent.
  - 1. By increasing the supply of the higher, or scarcer, forms of talent.
    - (a) By vocational education, especially for the training of business men.
    - (b) By cutting off incomes which support capable men in idleness.
  - 2. By decreasing the supply of the lower, or more abundant, forms of labor power.
    - (a) By the restriction of immigration.
    - (b) By the restriction of marriage.
      - (1) By the elimination of defectives.
      - (2) By the requirement of a minimum standard income.
    - (c) By a minimum wage law.
    - (d) By fixing building standards for dwellings.

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\*From the chapter on "Constructive Liberalism" in "Principles of Political Economy" by Thomas Nixon Carver: Ginn and Company, Boston, Massachusetts, 1919.

- C. For the increase of material equipment.
1. By increasing the available supply of land.
  2. By increasing the supply of capital.
    - (a) By encouraging thrift versus luxury.
    - (b) By building up savings institutions.
    - (c) By making investments safe.

## II. NONLEGISLATIVE PROGRAM

- A. For raising the standard of living among the laboring classes.
1. The educator as the rationalizer of standards.
  2. Thrift and the standard of living.
  3. Industrial coöperation as a means of business and social education.
- B. For creating sound public opinion and moral standards among the capable; for example,
1. The ambition of the family-builder.
  2. The idea that leisure is disgraceful.
  3. The idea that the productive life is the religious and moral life.
  4. The idea that wealth is tools rather than a means of gratification.
  5. The idea that the possession of wealth confers no license for luxury or leisure.
  6. The idea that government is a means, not an end.
  7. Professional standards among business men.
- C. For discouraging vicious and demoralizing developments of public opinion; for example,

1. The cult of incompetence and self-pity.
2. The gospel of covetousness or the jealousy of success.
3. The idea that the capitalization of verbosity is constructive business.

### 58. Economic Reform in China from a Christian Viewpoint\*

We desire to affirm, at the outset, our conviction that "no outward adjustments can, of themselves, bring us near to the Kingdom of God" and that the coming of this kingdom depends upon the conversion of the minds and hearts of men. But we affirm also, with equal conviction, that men whose hearts and minds are truly converted will, of necessity, seek such outward adjustments, because these adjustments are the visible manifestations of an inward change. We maintain that the church of Christ is a social fact and that the gospel carries a social message because there must be these visible manifestations of inward change. Since we hold these convictions, we believe that the church must look with lively concern upon the material welfare of the Chinese people.

The Christian, in whatever land he may be, can picture no future state of society, that will measure up to Christian standards, in which there is poverty of the

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\*Introductory Statement from the Report of the Committee on the Church and China's Economic and Industrial Problems to the National Christian Conference of 1922,

sort he sees about him. The principle, therefore, upon which we base the whole of what we have to say is our belief that the application of the gospel to social problems means nothing less, in the long run, than the complete abolition of poverty. The definite proposals that we make must be judged with this principle in mind and in the light of the fact that poverty in China is more intense and more widespread than in almost any other great country. It is in the shadow of this poverty that we must struggle forward.

A famine forces us to examine our social and economic system to determine, if we may, the causes of such general suffering. As it is the gladly accepted duty of the Christian to relieve suffering, so it is equally his duty to do his full share toward the prevention of suffering. The Christian church ought, we believe, to attack poverty in the same spirit of fellowship and of devotion to the welfare of the people that it has shown in its work for the relief of famine sufferers.

The causes of China's poverty are many. Some of these causes lie only indirectly in the sphere of the activity of the Christian church. Such, for example, are civil war and the instability of government, the indifference and rapacity of officials, the lack of an adequate system of inland transportation and the absence of large undertakings for the control of rivers. The very numbers of the Chinese people are a factor of no small importance. The proposals that are made in this report are the result of the selection of certain causes for

attack. We have selected the causes that most need attention, that can, in our opinion, be profitably attacked, or that are, by their nature, a direct challenge to the principles for which the Christian church stands. We point out remedies with no thought that we may say the final word on debated subjects but in the hope that we may do something to arouse the church and guide its efforts. We repeat that the goal of the Christian church is the Kingdom of God and we believe that the steps which we propose are steps along the road toward that kingdom.

### 59. Socialism\*

*By Sun Yat Sen*

"In our virgin country there is opportunity to begin rightly, and I am convinced that we should strive in every way so to meet the advance of industrialism that the worst features of it should be prevented from ever taking root. Therefore, I advocate Socialism. And what do I mean by that? I shall work in the future, as I have been working in the past, for the introduction of a system whereby the creators of wealth, the laborers, will be able to receive their fair share of the production, and this must be based upon a common ground of justice and fraternity. By this system production would be enhanced and increased to the

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\*Part of an interview, "Sun Yat Sen on Socialism," in the *New York Call*, June 28, 1914.



maximum, with a minimum of poverty and labor slavery. All men would have their proportion of the products of the wealth now awaiting development at their hands; they would reap the full fruit of their toil, secure favorable conditions of labor, and obtain opportunity in leisure to think of other things than the daily grind in the mill or the mine. They would be able to cultivate the mind, have adequate recreation, and procure the blessings which should be in all men's lives, but which, on the showing of other nations, are largely denied the workers and the poorer masses.

"A chance should be given to all in the race for a livelihood in life, and the fullest measure of liberty should be provided. This is what I will fight to establish in China.

"When I urge Socialism, or a socialistic system of government, I urge a system which will create for the people of China a direct interest in the vital affairs of their whole country; consequently it will create a more virile and worthy patriotism. I want to see the great multitudes of my country participate in the results of the productiveness of the country that is their own, and this is what I mean by nationalism.

"I also want to see that the state derives the fullest value from the sources of revenue which should be under its immediate control. I advocate state ownership of railways, tramways, electric light power, gas-works, canals and forests. I want to see royalties coming to the state from mines and revenues from the land. . .

"The revenue derived from all these avenues will constitute a sum greatly in excess of what will be needed for state administration, and the balance may be used in the necessary works of education and the more charitable and desirable objects, such as the old-age pension, the care of the lame and the blind. . . ."

## 60. Socialism in China\*

*By Kiang Kang Hu*

In 1911 the first Socialist group was formed, and the first Socialist paper started. In three months, under the impetus of the First Revolution, the movement spread all over China. . . . Several Socialists had been elected to the Parliament of the newly established republic at Peking, and Socialist measures had been introduced.† There were in existence more than fifty Socialist newspapers. Socialist free public schools had been established, a Socialist trade union organized, a woman's auxiliary started, and immense quantities of leaflets and pamphlets distributed. Most curiously Chinese of all, Socialist theatrical organizations were touring the country from end to end with Socialist plays.

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\*From an article by Kiang Kang Hu in "The Masses" for October, 1914.

†Chang Chi, President of the first Senate, was a Socialist, educated in Paris and a friend of Jaurès. Ma Su, Sun Yat Sen's secretary, editor of the daily *China Republican*, the principal revolutionary newspaper (in English), and many others were Socialists.

In view of these facts, which only one who has seen the tremendous development of revolutionary ideas in China recently can well believe, it is not strange that the bloody hand of Yuan Shih-kai should have fallen on the Socialist movement. That the despot took the movement seriously is shown by the decree of dissolution which he issued August 8, 1913:

"The Socialist Party of China is using the cloak of a political party in order to conceal its evil designs. These demagogues would coerce the Government and flatter the people for their own evil ends. They are a danger to peace and to law and order. They advocate violence and assassination. Therefore they have incurred the displeasure not only of the Government but of the people as well. Many letters have been received from officers of Tientsin, Peking, and elsewhere, warning us against Socialist plots and conspiracies. Many foreign anarchists have joined them in order to disturb the international peace. The Socialist Party of China is not like the Socialists of other countries, who simply study Socialism. If we do not put an end to their activities a great outburst will follow.

"Therefore we have issued this decree calling upon the provincial governments and generals to dissolve the Socialist Party of China wherever found, and to arrest the leaders.

"Thus law and order can be preserved.

"YUAN SHIH-KAI,

"President of the Republic."

The decree was carried out. Everywhere the branches of the Socialist Party were forcibly broken up by troops, their treasuries confiscated, and their leaders arrested and executed. Not only that, but the homes and places of business of those known to be members of the Socialist Party were looted or confiscated.

The national headquarters of the party alone escaped, being located in English Town, Shanghai. But the whole fabric of the organization was effectually, for the time being, destroyed.

In order to make it clear how such an organization as this could come to exist in China, it is necessary to understand two things. One is that in China the propaganda of such doctrines as Republicanism and Revolutionism come with all the tremendous blasting power of the New. The Chinese have not been inoculated against these ideas. The Chinese mind in the first years of this century was virgin soil.

The other thing to understand is that the sentiment of Communism is very strong in China, having lasted from primitive times in the form of various customs and institutions. And industrially China is still in the handicraft stage of production: Capitalism has not yet brought in the philosophy of individualism as it has in the Western world. So the idea of the common ownership of the means of production is no strange and curious conception to the people of China. They do not have to overcome a century of capitalistic education before they can believe in Socialism.

In the last decade there had been scattered here and there in small groups throughout the Empire a few people who studied and advocated Humanitarianism, Communism, and Socialism. These groups, however, had no connection with each other, and their ideas were, for the most part, vague and misty. But they furnished,

in a few cases, an impetus for the starting of radical newspapers. These newspapers had as their purpose the introduction of new ideas into the country.

Chief among the methods of introducing new ideas was the translation of Western authors. There were thus published in Chinese portions of the writings of Balzac and Victor Hugo, of Byron and Shelley, of Dickens and Mark Twain, of Goethe and Heine, and, later on, of Kropotkin, Marx, Engels, and Bebel.

The revolutionary ideas of these poets and writers served to educate the readers of these newspapers, and incidentally their editors. I, Kiang Kang Hu, was an editor of one of these papers, being at the same time instructor in the University of Peking. Coming in contact with the doctrine of Socialism in this way, I became interested, and finally converted. Especially did I admire and value the masterwork of August Bebel, "Woman Under Socialism." So profoundly did it influence me that I began an agitation for the establishment of schools for women—a thing which had been undreamed of before in China. The agitation was successful and many schools were set up.

Full of this idea, I went in June, 1911, on a lecturing tour through Chekiang province, speaking on "Woman and the Socialist Movement." This speech was issued in pamphlet form and had a tremendous circulation. Then the storm of official displeasure broke over me. The viceroy of the province ordered my arrest. My newspaper and pamphlet were confiscated, and with

due solemnity publicly burned. I, disguised as a porter, escaped to English Town, Shanghai, where I was safe from arrest. This was the first instance on record of the prosecution of a Socialist in China.

It was also the beginning of the Socialist movement in China. On July 10, 1911, I organized a Socialist club in Shanghai, and on the same day the *Socialist Star*, the first Socialist newspaper in China, made its appearance.

This Socialist Club of Shanghai was originally organized more to study Socialism than to propagate it. About fifty men and women were members of the group, and earnestly they studied the Socialist classics.

But meanwhile the First Revolution had started in the South, at Hankow. On November 3, 1911, Shanghai fell into the hands of the revolutionists. Then the club changed its name to the Socialist Party of China, and organizers were sent out into the southern provinces, where many new branches were organized. The *Socialist Star* became a daily and had a wide circulation. The party membership increased with enormous rapidity. *The Socialist Party was the first political party, as such, in China.* On November 5, 1911, it met in its first annual convention at Shanghai and adopted a platform.

These Socialists, though not clear Marxists, having so recently been drawn into the movement, were nevertheless enthusiastically in earnest in their desire to establish a Socialist republic. They declared in their preamble for the common ownership of the land and the

means of production and then adopted the following eight planks as a working platform :

1. The establishment of a Republican form of government. . . .
2. The wiping out of all racial differences. . . .
3. The abolition of all the remaining forms of feudal slavery and establishment of the principle of equality before the law. . . .
4. The abolition of all hereditary estates. (China has a vast agricultural population, which suffers under absentee landlordism. . . . The agrarian question is one of the greatest problems in China to-day.)
5. A free and universal school system, on coeducational lines, together with free textbooks and the feeding of schoolchildren. (The great bulk of the people of China cannot read and write. There are as yet no public schools.) . . .
6. The abolition of all titles and estates. . . .
7. The abolition of the army and navy.

This platform was used by the thirty Socialists elected to the first Parliament at Peking as their working program. They introduced into Parliament a measure for equal, direct, and secret suffrage; a measure for the establishment of public schools; a measure for the abolition of all personal taxes; a measure to create an inheritance tax; a measure to abolish capital punishment; a measure to reduce the standing army; a measure to abolish girl slavery. None of these measures came up for a final vote, for before that time the Parliament had been dissolved by the soldiers of Yuan Shih-kai.

The party had by this time over four hundred branches in China, each with its official teachers and readers—for a great part of the membership could not read. Agitators and organizers, most of them working without pay, were sent out broadcast. The party owned

its own printing plant and published three official papers, the *Daily Socialist Star*, the *Weekly Socialist Bulletin*, and the *Monthly Official Bulletin*. Among the pamphlets and leaflets which were printed at this plant and sent out in great quantities, one of the most popular was the *Communist Manifesto*. In addition, many branches printed their own local papers and at one time there were over fifty of these in existence. Then, too, there were between ten and fifteen privately-owned papers which supported the Socialist Party. The extreme left of the Young China Association leaned strongly toward the party and the columns of many Young China papers were open to the Socialists.

The most important of the free schools established by the party was situated at Nanking. This school had an attendance of over eight hundred. Free public kindergartens were also established by the party.

A very curious part of the party organization was the Socialist Opera and Orchestra Company. In China, actors and musicians are very low caste. After the First Revolution, many of these joined the party, and the party organized them into several theatrical companies, which toured the country, playing symbolical Socialist plays, and proving themselves an invaluable adjunct to the party propaganda.

The woman's organization had for its main work the furthering of the agitation for woman's suffrage. This organization had at one time close to one thousand members and in addition many women belonged directly



to the party itself. Schools for women were started by the party, and had a large attendance.

In addition, the party collected funds for the sufferers in the famine districts, and in other places where there was need.

Meanwhile, an anarchist movement had grown up in China. Some of the anarchists joined the Socialist Party and sought to foist their views upon it. These two hostile schools of thought came to open battle at the second annual convention of the party. Finding themselves in a hopelessly small minority, the anarchists split off and formed the "Pure Socialist Party." . . .

The "Pure Socialist Party" and other anarchist groups did much to discredit the Socialist Party of China. People confused one with the other, and when the reaction set in, the Government craftily used this confusion to further its own ends.

Already during the second year of its existence, the Socialist Party was meeting with bitter opposition . . . not only from the Government, but also from the Republicans and the Constitutional Monarchists. Nevertheless, the party continued to grow.

But Yuan Shih-kai was extending his power and strengthening his army, with the intention of making his despotism secure. One by one the Republicans were skillfully worked out of place and power. Finally Song Chi-ying, one of the leaders of the Young China Association, who had raised a voice of suspicion against Yuan Shih-kai was assassinated, and though there was

no direct proof, it was believed by all that the assassin had been paid to do his work by Yuan Shih-kai. The despot in the meantime had borrowed great sums of money from the foreign banks, without consulting Parliament, as the constitution provided, and was using this money to strengthen his position.

All during the months of March and April, 1913, the Socialist Party held gigantic mass meetings all over the country, at which they exposed the duplicity of the Provisional President, Yuan Shih-kai. Manifestos were issued calling upon him to resign. Yuan Shih-kai now surrounded the House of Parliament with troops, gave "presents" to many of the representatives, and was almost unanimously elected President of China.

In July, 1913, the southern provinces, tardily awakening to the danger of the situation, rose against Yuan Shih-kai. It was too late. The Second Revolution, after two months of sanguinary fighting in Shanghai, Nanking, and elsewhere, was drowned in blood.

Parliament was dissolved and new elections ordered. All pretense of political freedom disappeared. The Young China Association was outlawed. The decree against the Socialist Party was issued. Everywhere the heads of Socialists and Republicans rolled in the dust.

The Socialist Party of China, as a party, has ceased to exist. Most of the leaders of the organization, those who have not paid with their heads for their loyalty to the working class, have gone to foreign countries, where

they are busy collecting money and laying plans for a new revolution. And in China itself the work is being carried on in secret by methods which cannot, at this time, be discussed. Suffice it to say that several brave comrades have already lost their lives in the hazardous work.

But there will be a Third Revolution, and the Socialist Party will again take its place in the Red International.

### 61. Quotations from Soviet Documents

1. The following is an extract from the Declaration of Rights and Duties of Laboring Humanity which explains the idea of the Russian leaders that a dictatorship of the proletariat must be the first step in establishing a socialistic government.

#### A DICTATORSHIP OF THE PROLETARIAT

The working class of Russia, true to the legacy of the Internationale, overthrew their bourgeoisie in October, 1917, and, with the help of the poorest peasantry, seized the powers of government. In establishing a dictatorship of the proletariat and the poorest peasantry, the working class resolved to wrest capital from the hands of the bourgeoisie, to unite all the means of production in the hands of the Socialist state and thus to increase as rapidly as possible the mass of the productive forces.

The first steps in that direction were:

Abolition of property in land, declaration of the entire soil to be national property, and the distribution of it to the workmen without purchase money, upon the principle of equality in utilizing it.

Declaration as national property of all forests, treasures of the earth and waters of general public utility, and all the belongings, whether animals or things, of the model farms and agricultural undertakings.

Introduction of a law for the control of workmen and for the nationalization of a number of branches of industry.

Nationalization of the banks, which heretofore were one of the mightiest instruments for the spoliation of society by capital.

Repudiation of the loans which were contracted by the czar's government upon the account of the Russian people.

Arming of the laborers and disarming of the propertied classes.

Besides all this, the introduction of a universal obligation to work, for the purpose of eliminating the parasitic strata of society, is planned.

As soon as production shall have been consolidated in the hands of the working masses, united in a gigantic association, in which the development of every single individual will appear as the condition for the development of all men; as soon as the old bourgeois state, with its classes and class-hatred, is definitely superseded by a

firmly established Socialist society which rests upon universal labor, upon the application and distribution of all productive forces according to plan, and upon the solidarity of all its members, then, along with the disappearance of class differences, will disappear also the necessity for the dictatorship of the working classes and for state power as the instrument of class domination.

2. The following is an extract on the suffrage from the Soviet Constitution which shows the means by which the Russian leaders proposed to maintain the Socialist state which was created by the establishment of the dictatorship of the proletariat.

#### CONCERNING THE RUSSIAN SOVIETS

The right to vote and to be elected to the Soviets is enjoyed by the following citizens of the Russian Socialist Soviet republic of both sexes who shall have completed their eighteenth year by the day of election :

All who have acquired the means of living through labor that is productive and useful to society and are members of the trades associations, namely :

(a) Laborers and employees of classes who are employed in industry, trade, and agriculture.

(b) Peasants and Cossack agricultural laborers who hire no labor.

(c) Employees and laborers in the offices of the Soviet government.

(d) Soldiers of the army and navy of the Soviets.

(e) Citizens of the two previous categories who have to any degree lost their capacity to work.

The following persons enjoy neither the right to vote nor to be voted for, even though they belong to one of the categories enumerated above, namely:

Persons who employ hired labor in order to obtain from it an increase of profits;

Persons who have an income without doing any work, such as interest from capital, receipts from property, and so on;

Private merchants, trade and commercial agents;  
Employees of communities for religious worship;  
Employees and agents of the former police, the gendarmerie corps, and the Ochrana; also members of the dynasty that formerly ruled in Russia;

Persons who have in legal form been declared demented or mentally deficient, and also deaf and dumb persons;

Persons who have been punished for selfish or dishonorable misdemeanors.



## APPENDIX

### SUGGESTIONS TO THE INSTRUCTOR

This collection of readings consists largely of actual reading assignments made to students in a course in elementary economics at St. John's University. These students have usually been in their second, or Sophomore, year in college. The purpose of the editor has been to present, in addition to the illustrative and descriptive material, a sufficient amount of exposition of principles to make it possible to use the book as a complete text in itself. If, however, the teacher is trained in the science of economics, he may desire to use the book as a supplement to lectures. Since conflicting opinions are sometimes presented, this use of the book will enable the competent teacher to bring home to the student the fallacy of accepting too easily the opinions he finds expressed in print.

If the teacher finds himself pressed for time, if he is not specially trained in economics, if he does not desire to give full discussion to principles and theory, he will probably find the book usable as a presentation of economic conditions and economic history.

Ordinarily, it is hoped, this book will be used as a supplement to a textbook. The work upon which the order of the readings is based is Ely's "Outlines of Economics" and this book or the briefer one by Ely and



Wicker will be found satisfactory. Both of these books are in the list below. There is no desire, however, to indicate that the book cannot be used with any text if attention is paid to the order in which the readings are assigned.

The teacher of economics in China faces a difficult and a complex task. He must get the student to understand the principles of the science. He must acquaint the student with the economic organization of his own country, he must apply the principles he teaches to the life with which the student is familiar and to the problems which China faces. These tasks are difficult enough but there is more to be done. The industrial and the economic methods of the West are having a remarkable influence on the economic life of China and of the other countries of the Far East. The teacher must do his best to present to the student a picture of this Western economic and industrial life and to show the different effects and influences it is having upon the various Eastern countries. These manifold duties are not easily performed and if this book of readings is of any help in performing them it will justify itself.

The teacher does not need to be told that it may be necessary to omit some of these readings. He may not care to spend as much time upon certain subjects as would be required if all the readings were used, he may desire to emphasize aspects of the general subject that are not especially emphasized in this book. This and

hundreds of other details are left entirely to his own judgment.

In assigning subjects for written exercises by the students the instructor is urged to do more than get the student to give back the statements of the book in his own language. The student ought to be encouraged to find the differences of opinion in the various chapters, to find the conflicts in judgment, and to come to his own conclusions. The conclusions that the student reaches to-day may not be his conclusions after he has been out of college for a number of years, but if the student does not get the habit, while he is in college, of thinking through to a conclusion he will, in all probability, never get it.

The following short list of books is given in the hope that it may be of assistance to those who desire to begin building up a library on economics in the English language. These titles are given because it is believed that these books ought to be purchased first. Certainly no instructor in economics will make a mistake if he advises the purchase of these books for the library of the school or college as rapidly as funds permit.

### GENERAL WORKS

- Richard T. Ely     *Outlines of Economics* (latest edition).  
New York : The Macmillan Company
- F. W. Taussing     *Principles of Economics* (latest edition).  
New York: The Macmillan Company

- Henry Clay      *Economics: An Introduction for the General Reader* (latest edition). New York: The Macmillan Company; 1918
- Edwin Cannan      *Wealth: A Brief Explanation of the Causes of Economic Welfare* (second edition). London: P. S. King; 1917
- Irving Fisher      *Elementary Principles of Economics*. New York: The Macmillan Company; 1916
- H. R. Seager      *Introduction to Economics* (latest edition). New York: Henry Holt
- T. N. Carver      *Principles of Political Economy*. Boston: Ginn & Company; 1919
- Alfred Marshall      *Principles of Economics* (sixth edition). London: Macmillan and Company; 1911
- Ely and Wicker      *Elementary Principles of Economics* (latest edition). New York: The Macmillan Company

#### WORKS ON CHINA AND THE FAR EAST

- V. G. Kale      *Introduction to the Study of Indian Economics*. Poona: Aryabhusan Press; 1918 (second edition)
- Hugo H. Miller      *Economic Conditions in the Philippines*. New York: Ginn & Company; 1920 (revised edition)

- Kenneth Duncan *Essentials of Economics*. Shanghai: The Commercial Press; 1917
- H. B. Morse *The Trade and Administration of China*. Shanghai: Kelly and Walsh (third edition)
- H. C. Chen *The Economic Principles of Confucius and His School*. New York: Columbia University Press; 1911
- Chin Chu *The Tariff Problem in China*. New York: Columbia University Press; 1916
- Leong and Tao *Village and Town Life in China*. London: George A. Unwin; 1915
- W. P. Wei *The Currency Problem in China*. New York: Columbia University Press; 1914
- C. S. See *The Foreign Trade of China*. New York: Columbia University Press; 1919
- H. L. Huang *The Land Tax in China*. New York: Columbia University Press; 1918
- The China Year Book*. Edited by H. G. W. Woodhead, Tientsin: Tientsin Press
- Chinese Social and Political Science Review*. Peking: The Chinese Social and Political Science Association
- Samuel Couling *The Encyclopedia Sinica*. London; 1917.

## HISTORICAL WORKS

- L. H. Haney *History of Economic Thought* (latest edition). New York: Macmillan Company
- C. A. Herrick *A History of Commerce and Industry*. New York: Macmillan Company; 1917
- Clive Day *History of Commerce*. New York: Longmans, Green Company; 1914
- W. Cunningham *An Essay on Western Civilization in Its Economic Aspects*, 2. vols. (Ancient Times)(Mediæval and Modern Times). Cambridge, at the University Press; 1910, 1911

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- Marshall, Wright,  
and Field *Materials for the Study of Elementary Economics*. Chicago: The University of Chicago Press; 1913
- C. J. Bullock *Selected Readings in Economics*. Boston: Ginn & Company; 1907
- W. H. Hamilton *Current Economic Problems*. Chicago: University of Chicago Press; 1916

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